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ABSTRACT

This is the final report of the High School Geography Project (HSGP), born of a joint committee of the National Council of Geographic Education and the Association of American Geographers, 1959-1961. Chapter one presents an interim, rather than final, assessment of the project as it stood in the summer of 1970, at its completion. Chapter two discusses the principle materials of the project, its objectives, teaching strategies, and content. Chapter three is a personal account of decisions and actions from 1964-1969, having a basic impact on the evolution of the final product. Chapter four examines the role of evaluation in the development of HSGP materials. Chapter five describes the preparation and dissemination of teacher education materials. The social history of the project is set forth in chapter six. The body of the report concludes in chapter seven with a look ahead toward further, recommended action. The appendices include a list of project participants, a project chronology, a list of project publications, an inventory of project materials, all the overview charts for the project units, a bibliography on the project itself, and a summary of financial support and expenditures. (Author/JH)

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HSGP

Donald J. Patton, Editor
Ronald J. B. Carswell
Nicholas Helburn
Dana G. Kurfman
William D. Pattison
Robert W. Richburg
Gilbert F. White
with the collaboration of the Steering Committee

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Final Report
On The High School Geography Project

From Geographic Discipline To Inquiring Student

by

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PREFACE

As the formal existence of the High School Geography Project drew toward a close in 1970, it seemed appropriate to many individuals associated with the project that a report be made covering its work since its inception in 1961. This concern, that the more important aspects of project experience be reviewed while memories were still fresh and remaining project staff had not yet dispersed, has resulted in the present report. Technically, it is the final report of the High School Geography Project. In another sense, however, it is an interim report, which does not pretend to offer the kind of assessment of the project and its impact on the teaching of geography in the American high school that can only be made after a number of years have elapsed.

In preparing this report the authors of the individual chapters made use of the whole record of project activity for the period 1961-1970. The many people who were involved in the work are listed in Appendix 1. The authors evaluated project experience, exchanged appraisals, and prepared independent chapters which offer personal views of different phases of the undertaking from its beginnings in the cooperation between the National Council on Geographic Education and the Association of American Geographers. Chapter 1 presents a broad interim assessment of the project as it stood in the summer of 1970. Chapter 2 discusses the principal materials of the project, their objectives, teaching strategies, and content. Chapter 3 is a highly personal account of those decisions made and action taken during the period 1964-1969 that had a basic impact on the evolution of the product described in the preceding chapter. Chapters 4 and 5 examine successively the role of evaluation in the development of HSGP curriculum materials and the preparation and dissemination of teacher education materials by the project to improve the teaching of geography and other social sciences in the high school. Equipped with the background provided by these chapters, the reader should be better able to follow the strands of social history spanning the entire existence of the project as they are set forth in chapter 6. The body of the report concludes with a look ahead in chapter 7 toward further recommended action. Several appendices provide additional specific data on a number of aspects of the project.

Much of the appraisal in this report grew out of a discussion held by the Steering Committee in June, 1970, in which the following participated: Phillip Bacon, Susan Beasley, Ronald J. B. Carswell, Robert Cason, Loyal Darr, George Davis, Arthur Getis, Nicholas Helburn, Robert Heller, Sister Hermana, A. David Hill, Jean Intermaggio, Hildegard Johnson, Richard Keppel, Clyde F. Kohn, Dana Kurfman, Robert McNee, Irving Morrissett, Salvatore Natoli, J. Warren Nystrom, William D. Pattison, Donald J. Patton, Anthony Petrillo, Ina Phillips, Robert W. Richburg, William Stevens, Waldo Tobler, Rebecca Toevs, Philip Wagner and Gilbert F. White. Robert Pratt provided special help in examining the project history. Members of the Steering Committee reviewed an early draft of the materials.

We can not trace out the specific contributions of ideas and skills from all who shared in the project, but we hope that the report makes it plain that the outcome reflects the constructive interaction of many students, teachers, administrators and geographers.

The authors are indebted to Gabrielle Cooke for the cover design and for the supervision of the volume's production. The appendices were compiled and checked by Imogene Aikin, Gabrielle Cooke, and Connie Maupin.

Donald J. Patton

High School Geography Project
Boulder, Colorado
September, 1970

Chapter 1

Assessment in Midstream

Gilbert F. White

Will a student from an inner-city school in Newark develop a different view of his city and of his place in a rapidly urbanizing world than he would have two years ago? Will a student in an experimental school in the northern Chicago suburbs carry away any different skills in coping with the complexities of his earth—its hunger, its alterations under the hand of man, its potentialities —than would have been the case before the High School Geography Project was introduced? These are questions to which the answers slowly are unfolding as the materials produced by the project become available in 1970. It will take a good many years of testing in all sorts of conditions before the answers are clear. It will be at least five years before it is known whether the materials will come within reach of any substantial number of high school students or of young people being prepared for high school teaching. And it will be longer before the impact of the project materials and processes upon the attitudes and methods of educators and geographers who take the next steps can be judged accurately.

What now is clear is that the effort begun in 1961, with the aid of the Fund for the Advancement of Education and carried forward with the support of the National Science Foundation, to prepare an improved course in high school geography is complete, that the product has met certain tests of effectiveness, and that the process of creating the course to help students deal with a changing world already has generated changes among the teachers, administrators, and research scholars who took part. Starting with emphasis on geographic discipline, the effort ended with student inquiry.

The High School Geography Project began with the recognition that if geographic ideas were to be taught more widely it would be necessary to draw upon many teachers who had little or no formal preparation for the task. The course materials have been tried with teachers possessing graduate experience in geography as well as with those who encountered the subject for the first time. They were tested by many teachers who had received only a smattering of geographic analysis in undergraduate courses. As now prepared, the materials seem to go far to meet the needs of all. The experienced teacher can use them as a point of departure. The inexperienced teacher can gain sufficient confidence from student materials and teacher's guides to move ahead with classroom activities that inspire student thinking. For the guides cannot be used in a plodding, pedestrian way: they require inquiry on the part of both student and teacher.

There is little in the course materials that smacks of rote learning or of description of earth features for its own sake. There is much that speaks of geographic concepts and skills. The result is a product which differs significantly from most other attempts to assist geographic thinking at the high school level. There is concern for the attitudes which students develop toward their fellow members of the human race and their com-

mon habitat. Description of parts of the world is secondary. The globe's surface is not covered region by region. Rather, methods of understanding the complexity and variety of the globe are developed by referring to whatever areas are appropriate to the teaching strategy.

Although designed to be used as a full-year course at the secondary school level, the materials have been shown to be highly flexible in adaptation to curricula. The unit on cities can be made a part of a social studies course or a program on urban problems. The habitat unit can be used along with earth science and biology materials to deal with problems of science and society. A school system can adopt the whole course or use only half of it for one semester or devise a combination of its six component parts.

In this regard, the project serves to extend the reach of geographic thinking beyond the confines of the conventional one-year course. The materials can contribute to the strengthening of other offerings. And they provide a framework for weaving together other sectors of the social studies and of the natural sciences.

From trials in more than 200 schools of many varieties—ranging from Eastern inner-city and Georgia farming community to university experimental schools—it has been shown that the greater part of the materials as now published are highly teachable. They excite the interest and curiosity of students in almost all situations, appealing differently to one group than another. With their diversity of activities and grades of difficulty, they can sustain attention from groups of slow learners and also provide opportunities for rapid learners to go ahead at their own pace.

Any curriculum reform project heavily reflects the personal experience and skills of the individuals who share responsibility. William Pattison contributed mightily to the conceptual organization of ideas in the early stages. Nicholas Helburn emphasized the basic importance of teachability, intellectual curiosity, and stimulation in classroom procedures. Dana Kurfman infused a searching interest in the process of classroom evaluation and in means of transmitting new ideas to teachers and teachers of teachers, the Boulder staff, and scattered teams of unit authors. The members of the Steering Committee, with their peculiar mix of research interest and teaching activity, guided the project away from a regional emphasis and away from didactic teaching and one-man organization. Robert McNee invented the settlement theme and then had the patience not to assert patent rights over subsequent modifications. Altogether, a diverse group of more than 300 classroom teachers, 20 psychologists, and 300 geographers took part in devising, testing, and revising course materials. Behind all of this was common recognition of an urgent need to use geographic thinking to guide and stimulate student inquiry about the world.

Ten years from now, if the venture is completely unsuccessful, high school use of geographic ideas will be little changed from today. If it is moderately unsuccessful, the course will be taught widely and in substantially its present form. If it is highly successful, it will have generated a series of competitive improvements and internal revisions so that the new course will be rapidly replaced by more effective ones. *Geography in an Urban Age* is not intended to be a mold in which geographic teaching is frozen. It should be a leaven which will help lighten and lift up the whole loaf of geographic education. It should lead in ferment.

This is not a definitive report on the effort to improve high school teaching of geography. Rather, the following chapters record the project's aspirations, product and dynamics as they are seen by people close to it at the time the formal work is completed. To others is left the searching assessment of the longer-term impacts of HSGP which may in time reveal how near it came to its goal.

Chapter 2

The Product

Donald J. Patton

The High School Geography Project has sought to improve the quality of geography in the American high school principally through the development of new curriculum materials. These include a year-long course, *Geography in an Urban Age*, designed for ninth and tenth grade levels; a reference volume for teachers, *The Local Community: A Handbook for Teachers*; and a comparatively shorter publication, *Sources of Information and Materials: Maps and Aerial Photographs*. The aggregate "product" of the project also includes other efforts and materials, such as teacher education kits, more appropriately discussed in later chapters of this report. This chapter concentrates, therefore, on those products which are most directly related to classroom teaching. Discussion is focused in particular on *Geography in an Urban Age*, toward the creation of which very substantial parts of the project's total effort and resources have been directed.

Geography in an Urban Age

The basic objective of *Geography in an Urban Age* is to be seen as a part of Francis Keppel's "third revolution" in education. The course seeks to "narrow the gap" between the discipline as it is taught in the high school classroom and the frontiers of current research and professional thinking in geography. The design, preparation, and final shaping of course materials have been influenced, therefore, by a perception of the kind of approach which would be necessary to effect a truly significant improvement in the status of high school geography: the materials would try to teach some of the ways the discipline looks at the world, some of the kinds of questions geographers ask about the world, and some of the methods geographers employ to answer the questions they ask. Nothing short of materials incorporating this type of departure would promise any real chance of improving the quality of geography in the schools.

Improvements in the geography taught in the high school might also have other educational benefits. One of the most important of these could be "transferability," the sort of learning which should enable the student to apply cognitive skills and basic concepts of the discipline to at least the partial answering of questions and the partial solutions of problems which will be of other times and places. If the course is successful, the student should not only be helped toward a perception of his present world in new and meaningful ways, but he should also possess sharpened mental tools for thinking about the world long after his high school geography course is concluded.

Much of the remainder of this chapter is a discussion of *Geography in an Urban Age* in terms of these objectives. The course is considered first in terms of the materials, their general nature and organization. An understanding of the materials then facilitates a discussion of the teaching strategies developed or suggested by the materials, since in a larger sense the product is a series of designs for a sequence of classroom learning experiences by high school students. After materials and teaching strategies have been discussed, the chapter con-

Fig. 1: GEOGRAPHY IN AN URBAN AGE—ACTIVITIES BY UNIT

Unit	Integral Activities	Related Optional Activities
1 Geography of Cities	1. City Location and Growth 2. New Orleans 3. City Shape and Structure 4. Portsville 5. Sizes and Spacing of Cities 6. Cities with Special Functions	A Tale of Three Cities Bruges Time-Distance Migrants to the City Megalopolis Local Community Study Local Shopping Survey
2 Manufacturing and Agriculture	1. Geographic Patterns of Manufacturing 2. The Importance of Manufacturing 3. Location of the Metfab Company 4. Graphic Examples of Industrial Location 5. Hunger 6. The Agricultural Realm 7. Interviews with Farmers 8. The Game of Farming 9. Enough Food for the World	Locating Metfab in the U.S.S.R. Two Case Studies
3 Cultural Geography	1. Different Ideas About Cattle 2. A Lesson From Sports 3. Expansion of Islam 4. Canada: A Regional Question 5. Culture Change: A Trend Toward Uniformity	Games Illustrating the Spread of Ideas Supplementary Reading: The Long Road
4 Political Geography	1. Section 2. One Man, One Vote 3. School Districts for Millersburg 4. London 5. Point Roberts	
5 Habitat	1. Habitat and Man 2. Two Rivers 3. Watchung 4. Rutile and the Beach 5. Flood Hazards 6. Water Balance 7. Waste Management	
6 Japan	1. Introduction to Japan 2. Traditional Japan 3. Japan Today 4. The Modernization of Japan	

cludes with a fuller discussion of course objectives, together with associated content, for which pertinent illustrations can then be drawn from the product outlined in the previous subsections.

The Materials

The curriculum materials designed and produced by HSGP for a year's course in geography were published during 1969 and 1970 by The Macmillan Company for commercial distribution. The course, designed and developed as an integrated whole, consists of six sequential units, each of which has been published separately. The full set of published materials for each unit contains separate softcover books for teacher and students together with a series of supporting teaching materials, also packaged separately. The course is complete; all the essential materials needed by teacher and students are included, except examination questions. This aspect of curriculum materials is met in part, however, by the inclusion of questions which could be used by the teacher for testing the attainment of educational objectives.

The sequence of units in *Geography in an Urban Age* is as follows:

Unit 1 Geography of Cities
Unit 2 Manufacturing and Agriculture
Unit 3 Cultural Geography
Unit 4 Political Geography
Unit 5 Habitat and Resources
Unit 6 Japan

Each of the six units is divided for teaching purposes into activities ranging in estimated teaching time from one class period or less to eight or ten class periods. The entire course contains 46 activities, of which some 9 or 10 are considered optional, available either for an entire class or for selected students at the discretion of the teacher. The units vary in length. For example, Unit 1, *Geography of Cities*, contains six integral activities and seven optional; the teacher who elects to teach most or all of the unit activities, including the optional ones, might well require some six to eight weeks of teaching time. By contrast, Unit 4, *Political Geography*, contains only five activities, none of which are classified strictly as optional. Its estimated teaching time is only about four to five weeks. The full list of integral and optional activities in each unit appears in Fig. 1.

The entire course contains somewhat more material —an estimated 30 per cent—than might be covered in a normal year's work by an average class. This amount of curriculum materials may give the teacher a degree of flexibility in teaching the course. Some of the optional activities, as well as some of the additional, optional parts of integral activities, present more difficult material which could be challenging either to the better students within individual classes or to whole classes which work comparatively rapidly. Other optional activities, conversely, offer opportunities for further work with and reinforcement of ideas and skills developed in the main sequence of integral activities. An example occurs in the unit *Cultural Geography*, where an optional activity, "Games Illustrating the Spread of Ideas," is available should a teacher decide that his class needed a rather simplified introduction to the idea of spatial diffusion before beginning the somewhat more difficult and demanding integral activities which develop this theme further.

All six units contain a Teacher's Guide, a Student Resources, and a group of other materials for use directly by the teacher or for distribution to students at appropriate times within particular activities. For ease of handling, reference, and distribution, most of the separates are packaged in indexed boxes. The array of materials used in two of the units are illustrated in the photographs on pages 6 and 7. Appendix 4 lists the inventory of materials which would be used by a teacher with a class of 30 students.

Display of materials used in Unit 1, *Geography of Cities.*

Display of materials used in Unit 2, *Manufacturing and Agriculture.*

Each Teacher's Guide contains rather detailed strategies for teaching the unit, while also offering a range of options and additional suggestions for teaching what is actually a rather loosely-structured, open-ended course. The guides, with their informational background as well as their help on classroom strategies, should be usable by the teacher with relatively little experience in geography. The more experienced teacher should also be able to find the guides helpful, particularly as a point of departure for his own teaching.

Each guide has an introduction to the unit, unit educational objectives and means of evaluation, an inventory of materials, advance planning suggestions for teaching the unit, and an overview chart of the entire unit. The chart enables the teacher to grasp quickly and in broad perspective the unit's content and teaching strategies, the estimated time for teaching each integral activity, and the related optional activities or possible home assignments he might wish to consider. The overview chart for the first three activities in Unit 1, *Geography of Cities*, is reproduced in Figure 2. The overview charts covering all of the units appear in Appendix 5.

The guides similarly offer introductory overviews for each of the activities in the unit, enabling the teacher to identify the basic content and major parts of the activity, the materials which are needed, and the activity's educational objectives. Equipped with this information, he should be better able to decide if he will teach the activity, and if so, how he will teach it. The guidelines that follow the overview section present detailed directions, suggestions, cautions, and informational background for teaching, not all of which will necessarily be used by the teacher. The style of the guidelines attempts to be detailed in terms of classroom strategy and information, yet openly suggestive, cognizant of the rich experience the teacher may bring to the classroom and the judgment he can exercise in selecting options appropriate for his students. Throughout, the guides seek to encourage student inquiry. A sample of a page from a Teacher's Guide, drawn from the guidelines to "School Districts for Millersburg" activity in *Political Geography*, page 27, is reproduced in Figure 3.

Students receive information through a wide range of means, only part of which is present in the Student Resources. In general, the Resources contain data for which some other mode of transmittal is not required by a particular teaching strategy. While students do derive information and directions from the Student Resources in almost every activity, the Resources are perhaps best described as reference volumes for part of the data with which students work.

Part of the innovation in the teaching of geography offered by *Geography in an Urban Age* is associated with the use of materials external to the six Student Resources. Five of the units have a short Student Manual containing particular exercises requiring student writing, but all the units include other types of separates ranging from printed sheets of text through role cards to various hardware. Most of the course materials are reusable. The separate materials are more appropriately discussed in the following section of this chapter in connection with the classroom strategies with which they are used.

Teaching Strategies

If the pedagogy of the project's course is to reflect strong commitment to cognitive and affective values of inquiry learning, and if the student is to experience the excitement of making discoveries which will help to explain and give meaning to some of the phenomena and processes he can observe about him, then the routes by which he is to be led into inductive learning must be carefully prepared and sufficiently diversified to retain his interest and to aid the set of learning experiences. Diversity in classroom strategies implies diversity in the media by which data are relayed to students. While infor-

Fig. 2: OVERVIEW CHART FOR FIRST THREE ACTIVITIES IN UNIT 1

Integral Activities	Time in 50 min. class periods	Media and Procedures	Major Ideas and Skills	Possible Home Assignments	Related Optional Activities
1 City Location and Growth	3	Students select settlement sites using hypothetical diagrams. They then prepare diagrams for a current subdivision site as well as for one in the future. Next they use drainage maps of the American Midwest and predict where settlements might develop. Predictions are checked with reality.	Site features and locational factors influence city growth. Locational advantages or disadvantages are relative to the times and do change. Skills in making and justifying decisions.	Preparation of site diagrams Readings: "Present-Day Site Selection" "Frontier Lawyer"	A Tale of Three Cities Bruges
2 New Orleans	4	Students use aerial photographs and topographic maps to learn about the parts that comprise the city and the interrelationships of the parts. They then study three residential neighborhoods and try to account for observed differences.	Urban analysis Skills in interpreting aerial photographs and maps. Skills in hypothesizing about relationships between urban features and social and economic characteristics of the population.	Reading: "Topographic Maps" Using census data to try to locate two residential areas on a map.	Time-Distance
3 City Shape and Structure	4	Students discuss 4 diagrams that indicate directions in which cities might grow. They predict three distributions within the city of Chicago based on a theory of city growth and then check their predictions against actual distributions. A second theory is suggested and students look for evidence in maps. Then they try to combine the two theories.	Skills in working with abstractions (theories). Skills in looking at a whole city to identify relationships not apparent otherwise. Skills in using the scientific method (prediction and verification).	Readings: "Understanding the City" "Age Distribution in Chicago" "A Different Theory"	Migrants to the City Megalopolis

Fig. 3: SAMPLE PAGE FROM A TEACHER'S GUIDE

nity for meaningful communication between groups of varied background. He notes, too, however, that specialized services such as appropriate libraries would be more difficult to provide in this situation.

GUIDELINES

THE CITY OF MILLERSBURG

In preparation for mapping Millersburg's school districts, students should be assigned as homework the reading "The City of Millersburg," found on page 25 of their *Student Resources*. This reading describes Millersburg's growth, examines the ethnic and racial background of the population, and describes some of the physical characteristics of the city. A problem is described: Millersburg is about to redistrict for high schools.

The reading tells students that there are more than 12,000 students of high school age and the number is expected to swell. Six schools are to be built, and students should be able to estimate that the districts they plan could be designed to serve equal numbers of students (around 2,000 each), if this is a goal that they support. They will have to infer the student population figure from the population density maps and their general knowledge about where families with teen-age children live. ("City Shape and Structure" in the unit *Geography of Cities* dealt with intra-urban population pyramids.)

Numbers of students is but one consideration of the problem of districting. Students are provided with a series of maps on pages 28–31 in the *Student Resources* that give them information about family income, population density, ethnic composition of the population, industrial and commercial zones, transportation facilities, and locations of the elementary schools. They should begin to grapple with such issues as integration or segregation, bussing or walking, and future growth. Students have a work map on page 7 of the *Student Manual*, the only map which they are to mark.

When students have read the background reading, are aware of the city's problem, and have looked over the series of maps in the *Student Resources*, you might ask:

What sorts of considerations should you think about before you actually start to draw the district boundaries on your map?

You might begin by presenting an example: Should all students be able to walk to school or would they have to be bussed? After this, students might mention such considerations as whether to have mixed or single income districts, whether to have mixed or single ethnic group districts, and where to locate a specialized school. They should mention the need to determine an optimal high school size, taking into consideration potential growth of various areas. Students might also raise the question of whether or not to try to send to the same high school all those youngsters who attended elementary school together.

HIGH SCHOOL DISTRICTS FOR MILLERSBURG

In this part of the activity students will look at Millersburg as city administrators and school officials and work out solutions as to how to district the city for high schools. Two teaching strategies are suggested from which you may select the one that seems best suited for your class.

For those of you who want students to think for themselves and to face issues in a responsible way, you might let each student work out his own solution. Or, if you like the give and take that comes from conferring with a classmate, you might let students attack the problem in pairs. In either case, each student or pair of students should be prepared to justify and defend his decision.

Students working with topographic maps, stereograms and stereoscopes in the "New Orleans" activity.

mation in prose form is present in most activities, the amount and variety of information communicated in other forms are relatively large. Considerable emphasis is given to data presented in the form of maps, statistical tables, graphics, film strips, recordings and transparencies. In the "New Orleans" activity in the *Geography of Cities* unit, students learn about urban neighborhoods of contrasting socio-economic characteristics partly through the use of topographic maps, partly through the use of stereograms, and stereoscopes, and in part through the use of selected census data. In the "Portsville" activity of the same unit, students work with plastic Modulex map boards to construct a city with plastic building blocks of various colors, railroad strips, and perforated plastic sheets. Students derive information from the teacher, of course, but more frequently from exchanges of ideas and debate with other students. Data may be from the real world, but often are hypothetical. The first three activities in *Political Geography* are hypothetical, and "Point Roberts," the final activity in the same unit, contains both real and hypothetical data. A sampling of the kinds and forms of data with which students work and the kinds of questions and problems which students consider are illustrated in Figures 4 through 11 on pages 12-20.

Students working on a plastic Modulex map board in the "Portsville" activity.

Fig. 4: CROSS-SECTION OF A TYPICAL BEACH AND DUNE AREA CONTAINING RUTILE

Vegetation
Scattered open forest and flowering heathland, 2-3′ high. Occasional areas of swampland vegetation.

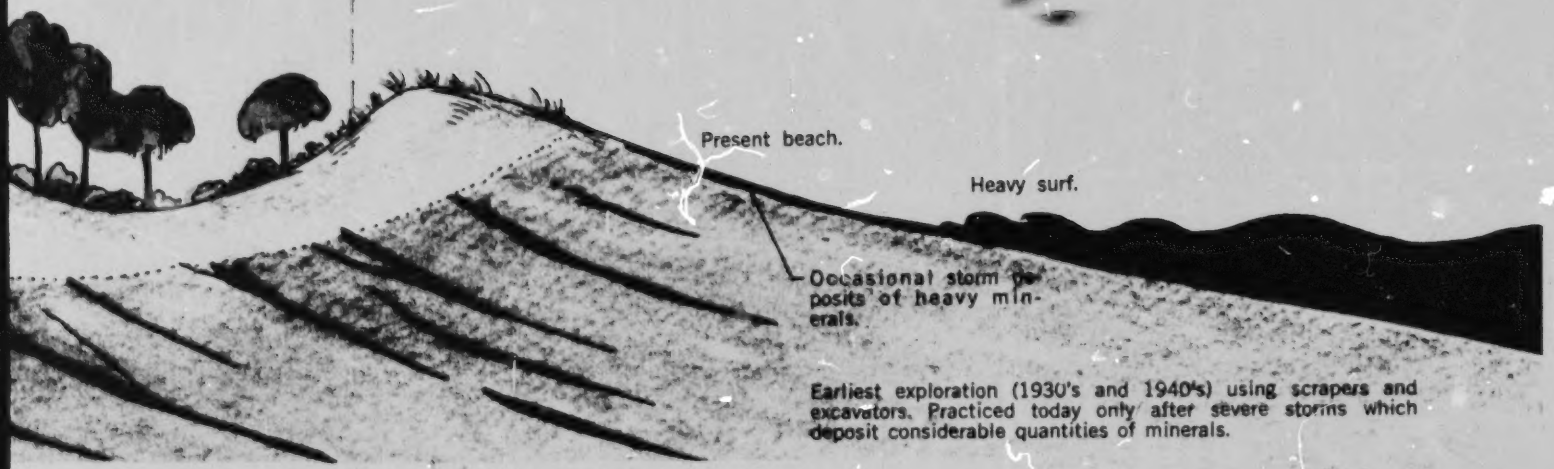
Topography
Old, broad, low dunes, formerly frontal dunes, now 2-5′ high. Occasional swamps.

Vegetation
Open forest of gumtrees and flowering banksias, 50-60′ high, with many low flowering shrubs. Protected from salty spray by frontal dune. This is also an area of small patches of rain-forest, as at Iluka.

Fig. 4. How should the conflict between commercial interests, which want to use the beach and dune area for rutile mining, and conservation interests, which want to preserve the natural conditions of the area, be resolved? This cross-section of beach and dune is part of the information students use as they debate this issue in "Rutile and the Beach" in *Habitat and Resources*.

Vegetation
Dune grasses, creepers, and salt-tolerant shrubs.
Topography
Frontal dune, 20-50' high.

Topography
Young, parallel dunes, 10-20' high.



Earliest exploration (1930's and 1940's) using scrapers and excavators. Practiced today only after severe storms which deposit considerable quantities of minerals.

Rich but scattered deposits of minerals.

Main dredging zone since early 1950's. Complete removal of old, high dunes and replacement with streamlined profile (not shown in drawing) with restoration of salt-tolerant vegetation.

(total distance represented: 4 miles)

Fig. 5: MILLERSBURG MINORITY GROUPS

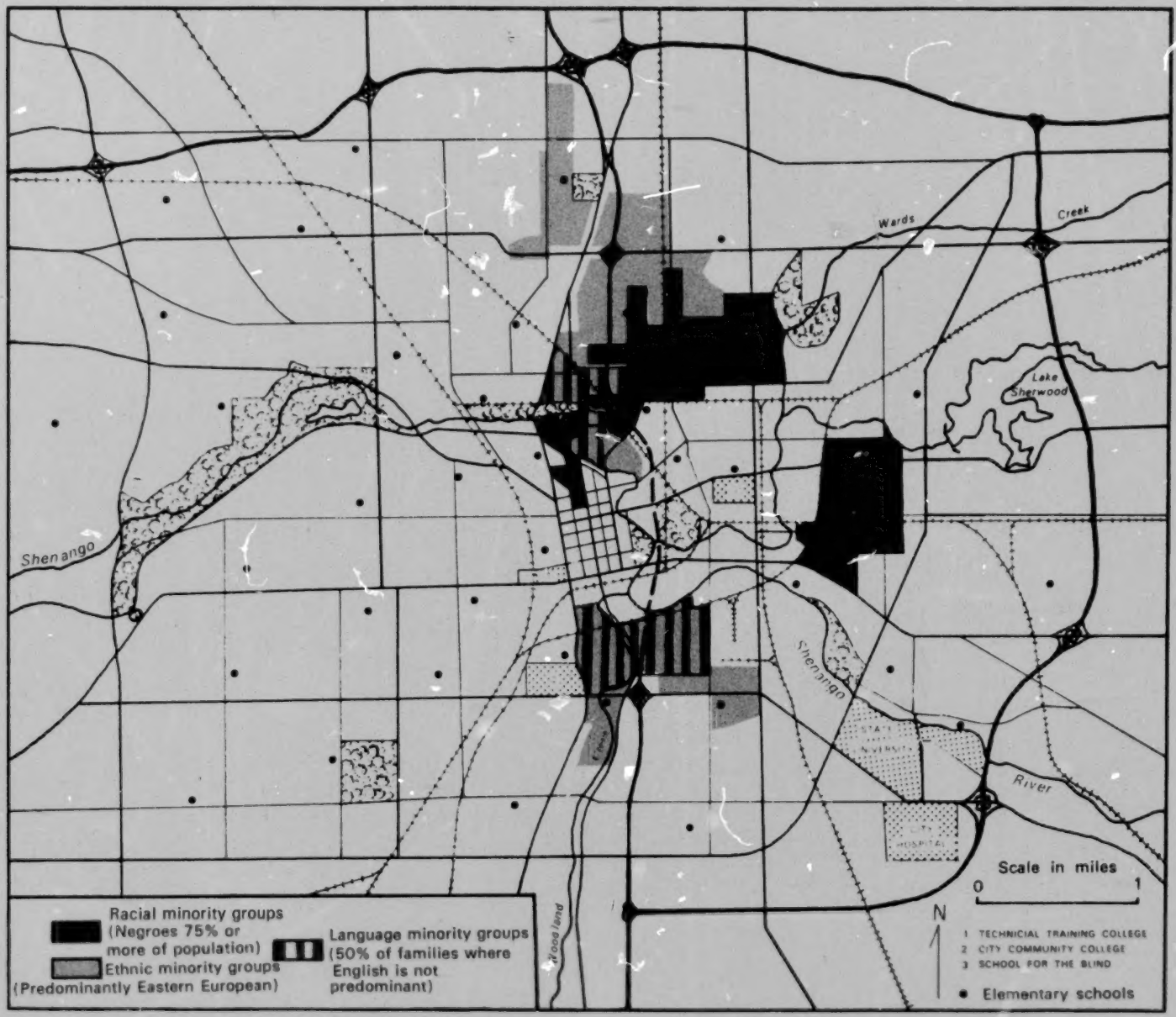


Fig. 5. How should high school district boundaries be drawn for the city of Millersburg, taking into account the spatial patterns of minority groups within the city, as shown on this map, as well as data on population density, industrial and business areas, and distribution of income groups shown on other maps? Students grapple with this problem in "School Districts for Millersburg" in *Political Geography*.

Fig. 6: PLACES FOR COWS

PLACES FOR COWS

As an American, where would you be surprised to see a cow? Check your choices on this list.

1. In a barn ____
2. In a church ____
3. In a milking parlor ____
4. In a graveyard ____
5. In a barnyard ____
6. In a field ____
7. In a stadium ____
8. On a road ____
9. On a racetrack ____
10. On a farm ____
11. On a downtown street ____
12. At a wedding ____
13. At a beach ____
14. At a festival ____
15. At a funeral ____

SUMMARY QUIZ

Write a one-paragraph comment on *each* of the following statements. If you agree with it, tell briefly why you think it is correct. If you disagree with it, say what is wrong with the statement.

1. It does not make sense for people with millions of cattle not to eat beef.

2. American uses of cattle are the best in the world.

3. One simple change in a culture often produces other changes in the culture.

Fig. 6. How do people in other parts of the world differ from Americans in their ideas about cattle? As students work on the opening activity, "Different Ideas about Cattle" of *Cultural Geography*, they not only learn that other cultures may record and use cattle differently than do people in the United States, but they are also led to understand that customs and attitudes very different from their own are thoroughly reasonable in other cultural settings.

Fig. 7: POPULATION GROWTH IN MAURITIUS

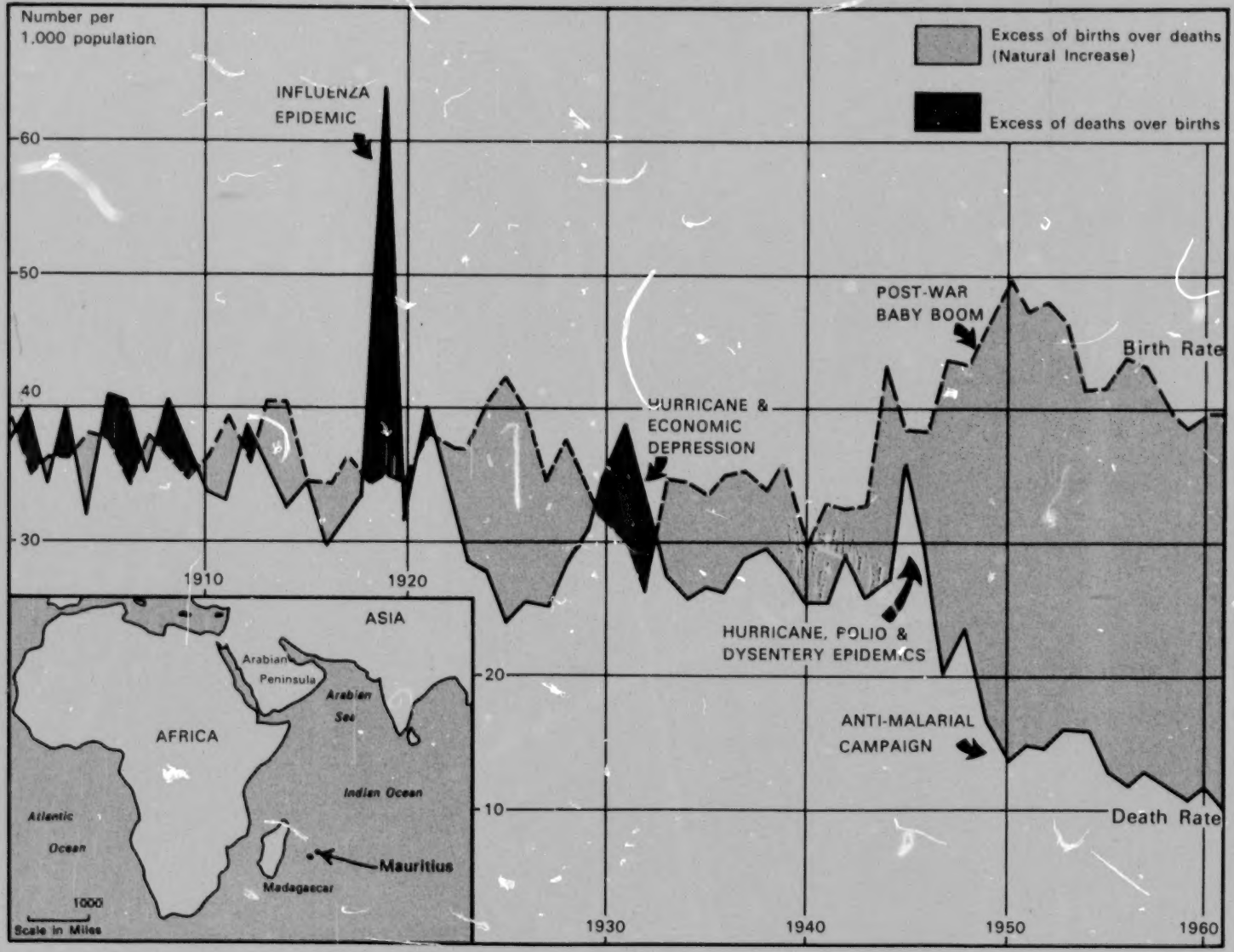
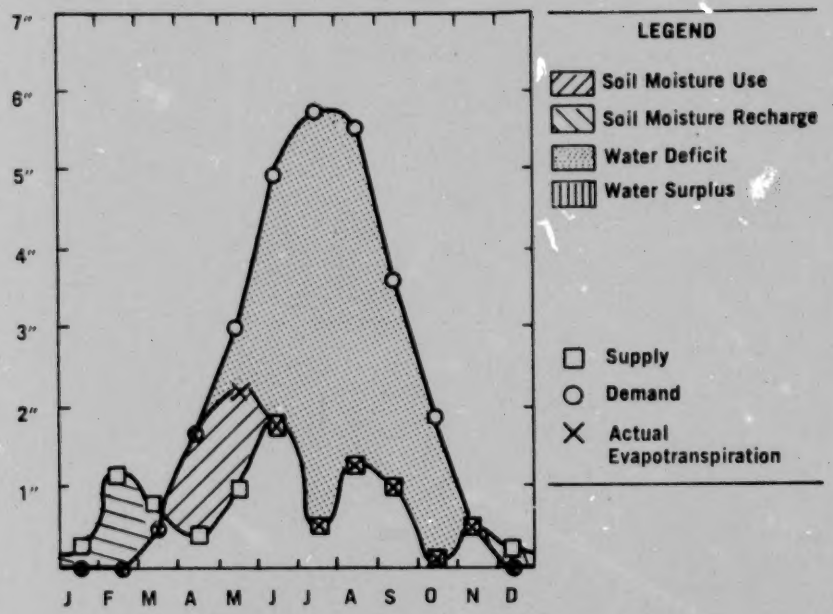
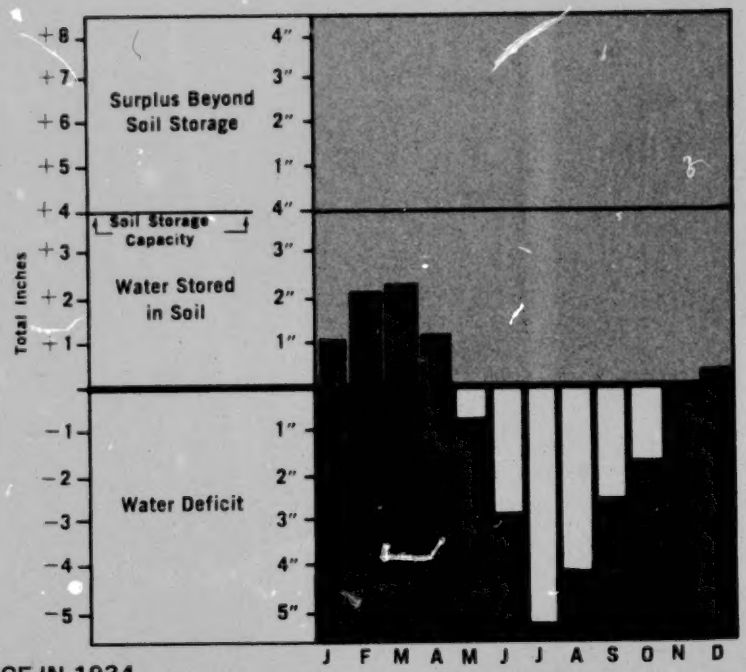


Fig. 7. Students are introduced to the geography of hunger through various kinds of data, including this population chart of the island of Mauritius, an area representative of less developed parts of the world where population is currently increasing at relatively high rates.

Fig. 8: COLBY WATER BALANCE, 1934





COLBY WATER BALANCE IN 1934

Data in Inches

	J	F	M	A	M	J	J	A	S	O	N	D
Supply	0.1	1.2	0.7	0.4	1.0	1.8	0.5	1.3	1.0	0.1	0.5	0.2
Demand	0.0	0.0	0.5	1.7	3.0	4.9	5.7	5.5	3.6	1.9	0.5	0.0
Difference	+0.1	+1.2	+0.2	−1.3	−2.0	−3.1	−5.2	−4.2	−2.6	−1.8	0.0	+0.2
Beginning of Month Soil Storage	1.0	1.1	2.3	2.5	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
End of Month Soil Storage	1.1	2.3	2.5	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
End of Month Surplus or Deficit	0.0	0.0	0.0	0.0	−0.8	−3.1	−5.2	−4.2	−2.6	−1.8	0.0	0.0

Fig. 8. Students begin the "Water Balance" activity in *Habitat and Resources* by reading a line from John Steinbeck's *The Grapes of Wrath*, describing a dust storm in the 1930's. Later in the activity they are challenged to use these data on Colby, Kansas, water balance in 1934 to explain the opening quotation.

Fig. 9: EXPANSION AND PRESENT EXTENT OF ISLAM

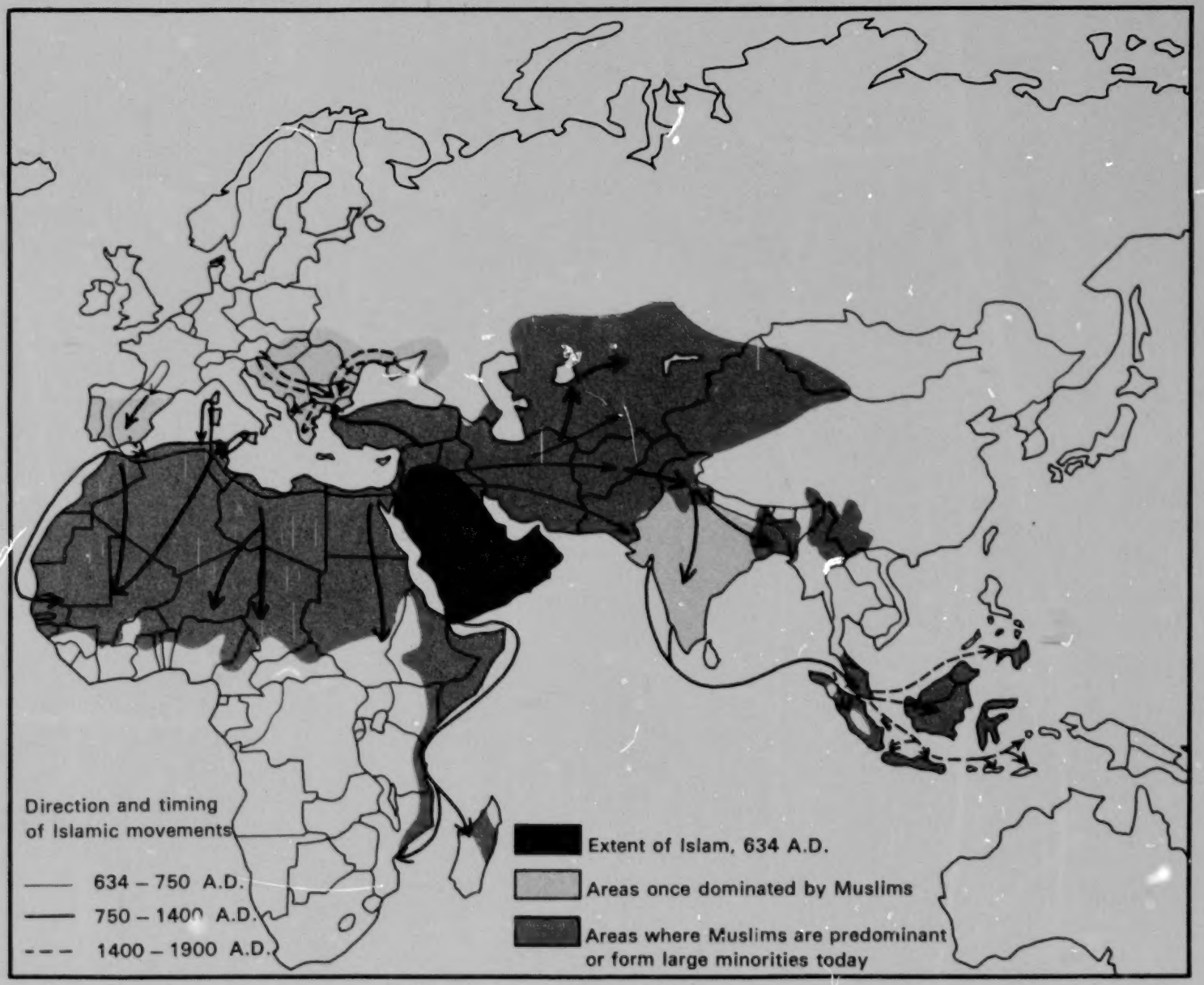

Direction and timing
of Islamic movements
634 – 750 A.D.
750 – 1400 A.D.
1400 – 1900 A.D.
Extent of Islam, 634 A.D.
Areas once dominated by Muslims
Areas where Muslims are predominant
or form large minorities today

Fig. 9. What are some of the principal factors which facilitated or impeded the diffusion of Islam outward from the Arabian peninsula? Students first design a simple spatial diffusion model, then work as separate teams to apply it to an interpretation of the diffusion of Islam in various directions and at various time periods from its area of origin.

Fig. 10: SITE DIAGRAMS

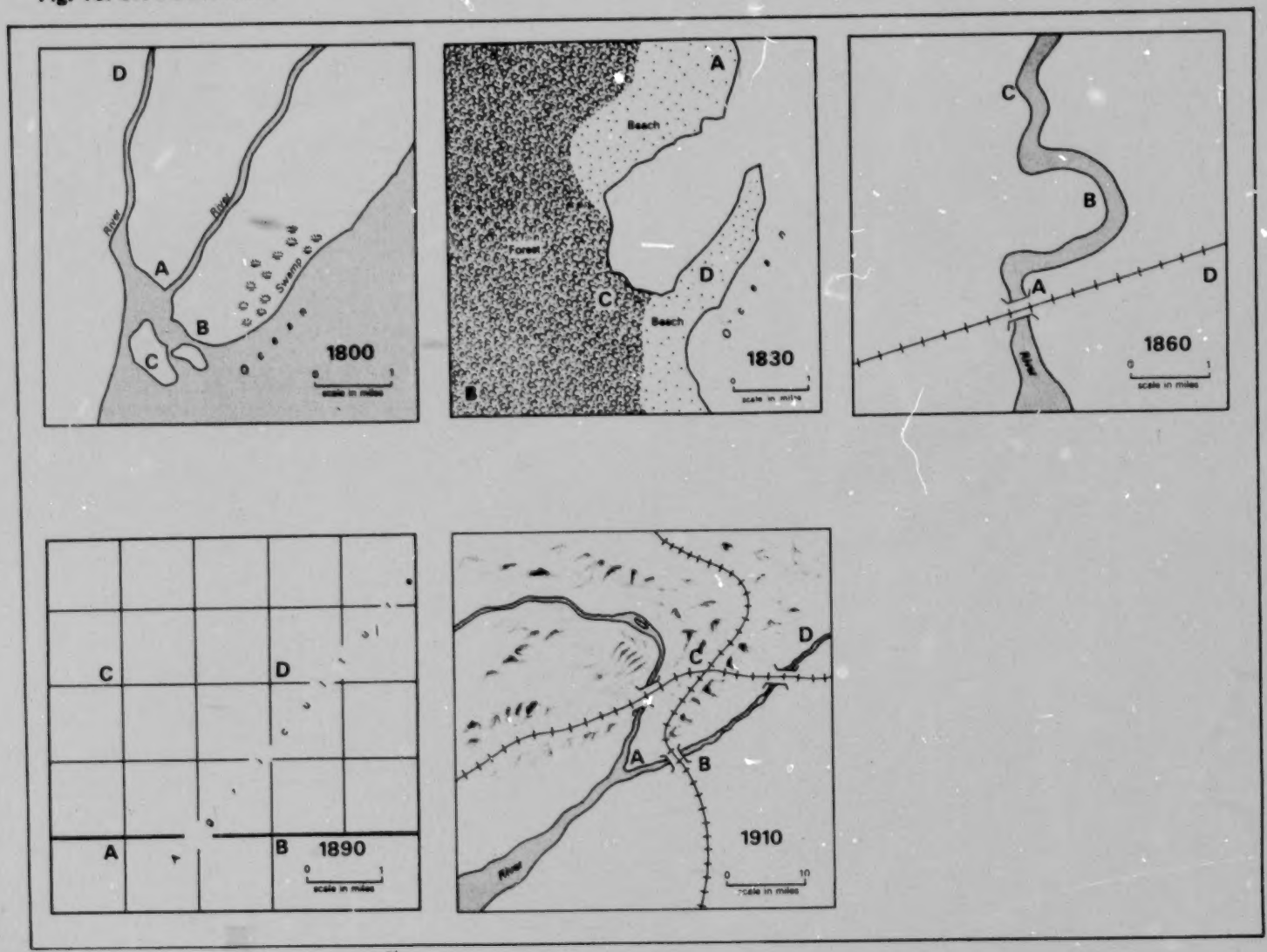


Fig. 10. Students assume that the areas shown in the diagrams are within the continental United States. On each diagram they are asked to circle the letter representing the site at which they think a settlement is most likely to develop in the year indicated. They are also asked to be prepared to give reasons for their choice in each case.

Fig. 11: TWO INDUSTRY DIAGRAMS

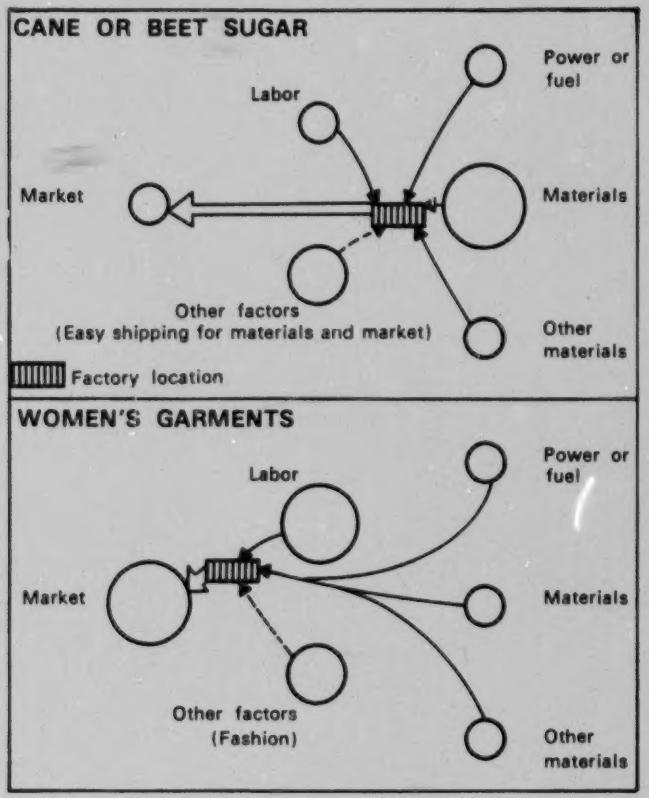


Fig. 11. How does a raw cane sugar or beet sugar mill differ from a factory manufacturing women's garments in the degree to which various factors such as materials, labor, market, power, etc. exert a relative pull upon the location of production? Students draw upon previous experience with locational diagrams for other industries, as well as a reading, to diagram the locational factors for the two industries. The diagrams shown here, which appear in the Teacher's Guide, are approximately what are expected from the students.

The close interrelationships between media and strategy, and between these and the educational objectives to be discussed in a later section of this chapter, may also be illustrated by means of two fragmentary samples from a transcript of actual student-teacher and student-to-student exchanges which occurred during the teaching of "The Game of Farming," in *Manufacturing and Agriculture*. In this activity pairs of students assume the role of a farmer in western Kansas during three separate time periods starting with a period of pioneer settlement in the years 1880-1882. They make decisions as to how they will invest their money each year. Before students decide on their investment allocations for the first year of play, 1880, they receive a role card which assigns them a previous background, such as an immigrant farmer from Germany or a former cotton farmer from Georgia. For the first year they are supposed to make their investment decisions in the light of their previous background, together with what little they know about western Kansas, which they have read from a railroad leaflet promoting settlement. In subsequent years they may modify their investment decisions to reflect what they have learned from the results of their previous choices and from exchanges of information with their neighbors.

In the transcript, students are in the midst of playing the game for the first period. Each pair of students has made decisions as to how they will invest $1,000 in a new 160-acre farm they are homesteading. According to the rules of the game, each group of students has the option to invest in various types of grain and livestock in units of $100 and in terms of units of 40 acres. Additional land up to 160 acres can be rented or rented out at the rate of $100 per 40 acres. Choices are made and recorded at appropriate places on an activity sheet. As the transcript begins, student-to-student debate as to how they are going to allocate their funds is still continuing.

The outcome cards, which indicate the multiplier, if any, for each unit of crop and livestock investment, are about to be passed out by the teacher. Reflecting the local vagaries of natural conditions in western Kansas, no two outcome cards will be precisely the same.

(Student chatter)

Student 1 "How much do you want to rent it for?"

Student 2 "All right, $200."

Student 1 "So now we have $500—"

Student 2 "No, let's save $500 for the next year."

Student 3 "Do you want to take a chance on something?"

Student 4 "Let's rent the land out."

Teacher: "Okay, now let's pass out the outcome cards for 1880. Be sure and read what it says at the beginning because it gives some kind of justification for the outcomes that are in it."

(student chatter)

"Oh, no!"

"We get three of wheat."

"None in oats."

"1.5 in rye."

Teacher: "What you want to do now is try to figure out from the descriptions why this is happening. Go ahead and figure out your total answer. Can you figure out then what happened?"

Student: "Oh, this drought damaged our oats and then our wheat did really well and corn just did not do well."

After students have completed their investment decisions for 1882, part of a teacher-to-student exchange follows:

Teacher: "How much money have you got left?"

Student 5 "We have got $700 after we pay the $500 for the cost of living."

Teacher: "That is right, and how are you going to spend it then?"

Student 5 "Oh, I guess we'll spend $300 on hogs—wait a minute—$200 on hogs."

Teacher: "Are you taking into consideration what happened last time?"

Student 5 "Yes, we are."

Teacher: "Oh, so you're going to gamble a little bit! Here are the last outcome cards—1882."

Student 6 "Not bad."

Teacher: "Now we have seen how each of us came out through this three-year period and I would like to see if we can make any kinds of generalizations or can we figure out anything that happened as a result of this? So I am going to open it up first of all by asking you, as that farmer how did you approach the situation?"

Student 7 "Well, we mainly went with cattle because we figured that with the railroad companies due, there would probably be a big market for cattle for shipping it out west and east, so we went to cattle every year."

Student 8 "We decided not to take too many cattle so we kind of cut it in half. We went with cattle and then we also went with grain."

Teacher: "Now, what word sums up this farming business?"

Student 9 "Work for yourself."

Teacher: "Yes. How would *you* put it?"

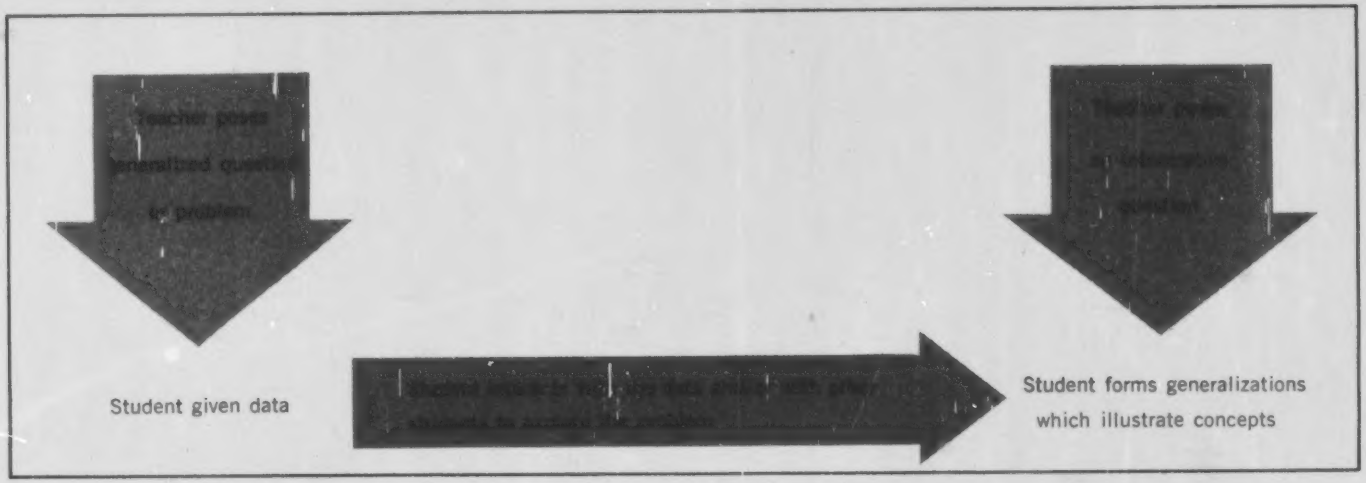
Student 10 "They had a risk."

In these vignettes of a class using course materials, students are learning about the annual decisions which farmers must make and the factors which may influence such decisions. Within the activity as a whole, students receive information from diverse sources: role cards; instruction sheets; a replica of a late nineteenth-century railroad promotional brochure; outcome cards based on actual weather records in western Kansas; replicas of old newspaper editions; graphs of agricultural commodity

yields, prices and values between 1885 and 1918 and between 1922 and 1932; wipe-out cards; student debate; and remarks by the teacher. The student is not asked to memorize the data; he is asked to consider it, to react to it, to use it critically in his thinking as he decides repeatedly what to do next. Students are involved in making decisions that should be valid and defensible. The activity employs the strategy of a game, and strong motivation is unleashed.

The requirement to consider information in the context of a problem, which is often introduced by the teacher, to reach tentative conclusions concerning the problem, to be confronted by further information which may seemingly invalidate the conclusions or decision initially arrived at, to modify such conclusions if necessary in the light of a new question or new evidence, require mental processes of the student quite different from those involved in the intake of expository writing and the memorization of place facts. Figure 12 depicts a simple model of one of the frequently-used basic approaches to inquiry learning in the activities of the course.

Fig. 12: MODEL OF THE STRUCTURE OF AN ACTIVITY



The emphasis on inquiry learning in the HSGP course has encouraged variety in the design of basic classroom teaching strategies and a wide sampling of learning experiences. In certain activities, students are confronted with data and questions and are prompted to reach tentative conclusions concerning a problem through the medium of a class discussion for which general guidelines are offered in the Teacher's Guide. In other activities, students are involved in "research" projects, sometimes individually, as in the first section of the "Information-Gathering and Mapping" part of "A Lesson from Sports" in *Cultural Geography*, but much more often as members of groups, as in "The Expansion of Islam" in the same unit. At some point, however, students are confronted with questions or problems or data which require them to react in some way to the information they have previously assembled, and to arrive at some sort of tentative conclusion or explanation in which decision-making or problem-solving on their part is involved.

Apparently most promising in terms of the degree of student involvement and impact of the learning experience are many of the problem-solving activities in which simulation is used as a teaching strategy. In certain activities the simulation is very generalized, as in the opening activity of the course, "City Location and Growth," where students are asked to choose the most desirable locations for settlements at several different time periods in terms of information present on hypothetical diagrams. (Fig. 10, page 19). In other cases the simulations are much more highly structured, including provisions for role-playing as a device for heightened student involvement, although even when the elements of the simulation are presented in considerable detail in the curriculum materials, the actual teaching of the activity can proceed in an open-ended fashion. An example of this type of simulation is "Location of the Metfab Company," in which students assume roles of management teams and participate in a decision as to where to locate a new metal fabricating plant to produce equipment for the basic and agricultural chemical industries. Each student, provided with certain data, has an opportunity to advocate and defend his view as to where the new factory should be located as he discusses the locational problem with other members of his management group, each of whom may argue for different locations and cite other data to support his contention. Later in the activity, after each management team has reached its own conclusion, students have a further opportunity to defend the final decision of their group against different conclusions which are likely to have been reached by other groups. Not only does debate and the necessity to defend a conclusion occur repeatedly and at two levels in this activity, but students are also led to realize certain generalizations more clearly—such as the idea that several different locations may each be almost equally favorable for an industry—than if they simply were to read such a generalization.

In certain of the simulations which employ role-playing, rewards to the role-players have been so built into the activity that veritable gaming results. As has been noted in connection with "The Game of Farming" transcript, students are motivated by the opportunity to increase their capital and to avoid being "wiped out." "Section," the opening activity in *Political Geography*, is essentially a game in which students try to "win" as large a share of a hypothetical state's annual budget for their own particular section of the state as possible, and also in which students, playing roles as legislators and executive committee members, seek to win "reelection" by virtue of their performance in public office. The line of distinction between role-playing simulation activities which are games and those which are not is a fine one at best, however, because students are motivated in part by a competitive spirit, even in activities such as "Location of the Metfab Company."

Other activities in which the simulation process is also quite highly structured do not employ role-playing. In "Portsville," the growth of a city and the development and change through time of various urban land uses are simulated. Here there is evidence also of intense arousal of motivation as students, working in small groups, are repeatedly required to make and justify decisions.

Other variations among the simulation activities can be mentioned. For example, there are simulations in which the choices involved in the solution of the problem and the factors bearing on the choices are quite explicit —such as in "Location of the Metfab Company." In other activities, such as "The Modernization of Japan" in the final unit, or "Rutile and the Beach" in *Habitat and Resources*, the choices themselves and the factors bearing on the choices are less explicit. In the "Portsville" activity, with its requirement for solutions to a whole series of unfolding problems—the location of various types of urban land use relative to other types at successive periods of time—the choices to be made and the cri-

teria in decision-making are less explicitly identified than they are in "Location of the Metfab Company."

The actual sequence of activities within the individual units has been established in part by an attempt to lead the student from less complex to more complex problem situations, and in part by the pedagogical constraints of variation in pace from activity to activity. Thus, activities using simulation and role-playing likely to generate heightened student involvement have been spaced deliberately to avoid prolonged periods of exceptional excitement, after which student interest in later activities might suffer.

While the data presented via various media are often quite new and unfamiliar, the problems upon which students work tend to be such that they are able to combine new data with their previous knowledge and experience. One of the features of the course materials is that they do ask the student to draw on his own ideas, and, in association with the new data, to solve problems. Part of the sense of excitement and accomplishment which students appear to experience may derive from their validation of the usefulness of their previous knowledge in problem-solving.

Not all teachers, however, will find the materials easy to use. A much greater volume and diversity of materials have to be manipulated than with courses based on textbooks. Requirements for advance teacher preparation are often demanding. Teachers may feel uneasy about classroom strategies based on student-to-student conversation and debate and student movement around the room. The whole range of departures from previous modes and patterns of classroom instruction may seem unwelcome, even threatening, to some teachers.

In *Geography in an Urban Age*, the success of many of the teaching strategies does depend on the social nature of classroom learning experiences. The social aspect of the course's strategies may consist simply of two students working and interacting as a pair; often it means

Classroom scene during school trials of parts of *Geography in an Urban Age*.

that students work in somewhat larger groups in which each has a specific part to perform requiring the qualities and skills-or-arts of responsibility, cooperation, persuasion, and compromise. The course materials frequently provide situations in which the student has the chance to think and speak as an individual, and to express his individuality, and yet to relate his individuality to group needs and goals.

Objectives and Content

If a basic objective of HSGP is "better geography in the schools," then the student requires much practice in developing cognitive skills and repeated experience with thought processes illustrating concepts basic to the structure of the discipline. The curriculum materials, with their multiple educational objectives, attempt to do this. Repeatedly students "use skills on data to develop generalizations which illustrate abstract ideas." (1)

In each of the six units students are led to generalizations which are considered meaningful for an understanding of order and diversity on the earth's surface.

As students are presented data in many forms, they also use various cognitive skills in order to reach these generalizations. All of the activities repeatedly require students to use and develop some of the lower-order intellectual skills, such as comprehension and classification. Thus, students are asked to translate data from one type of symbol to another, as from data on graphs to verbal form in "The Modernization of Japan." One or more of the more complex levels of intellectual skills are also present in each activity: analysis, synthesis, judgment and evaluation. For example, students are exposed in different ways to the skills of synthesis. In the first unit they engage in a degree of hypothesizing about certain socio-economic characteristics of selected urban neighborhoods in New Orleans on the basis of evidence interpreted from stereograms and topographic maps; in "City Shape and Structure" they encounter models of urban growth and land use patterns and construct their own map model of urban growth; in "Sizes and Spacings of Cities" they have further experience with models, this time of trade centers and tributary areas. A number of activities require skills of judgment and evaluation, as in "School Districts for Millersburg" where students consider population, economic, ethnic and other data for the hypothetical city of Millersburg in order to draw a set of high school boundaries for the city. (Fig. 5, page 14). In "Flood Hazards" in *Habitat and Resources*, students, meeting as a citizens committee, evaluate the flood problem confronting the Acme Metal Company and reach a judgment as to which combination of means to meet the problem should be supported.

The application of skills to data to reach conclusions or generalizations illustrates many of the important concepts basic to the structure of the discipline: relative location, distance, spatial distribution, areal association, spatial interaction, region, habitat, man-land relations, sequent occupance, spatial hierarchy, spatial diffusion, and others. Many of these ideas are illustrated a number of times, although individual concepts may receive particular emphasis in certain activities. A ready example is the illustration of the idea of "region" in "Canada, A Regional Question." "Spatial Diffusion" is illustrated extensively in several activities in *Cultural Geography*. In both skill and concept objectives, the course materials strive for reinforcement; students are led through closely related thought processes more than once.

Beyond the intellectual objectives of generalizations, skills, and concepts are objectives in the affective domain. It is less easy to be explicit about these. The course does try to arouse a positive attitude toward geography as a way of thinking and viewing the world, and an awakening of positive attitudes toward school and toward fellow students may also be a result, if not an explicit original objective, of the materials in the course. Some examples of changes in student attitudes are given later in this chapter.

In view of the objectives and the associated teaching methodology of the course, content departs from the conventional in terms of area and sequence of topics. In place of a region-by-region coverage of the earth is a selective treatment of topics involving important ideas and methods of problem-solving in geography, illustrated in terms of a number of different parts of the earth, although roughly half the activities are illustrated by areas in the United States. The first four integral activities of the first unit deal with aspects of American cities, but one of the two optional activities which can be used in conjunction with the first integral activity considers a European city—Bruges. While students start with areas for which they have in general the greatest amount of previous familiarity, American cities, their perspective is extended outward to the larger world, particularly beginning with the second unit. For example, in "Interviews with Farmers," students study factors in farmers' decision-making, first by listening to interviews with American farmers; then with farmers in Costa Rica,

Fig. 13: USES OF GEOGRAPHY IN AN URBAN AGE IN OTHER COURSES

Numbers refer to activities	1 Geography of Cities	2 Manufacturing & Agriculture	3 Cultural Geography	4 Political Geography	5 Habitat & Resources	6 Japan
North America	All	All	1,2,3,5,6	1,2,3,5	1,2,3,5 6,7	1
South America		7,8,9,11				
Europe	Optional 1	4,7,8,9,11	1,2,3,6	4		
Africa		7,8,11	1,3,4,6		2	
Asia		7,8,11	1,3,4,6			All
Australia					4	

a country with quite different physical environment and level of economic development; finally, with farmers in Poland, a country with central economic planning. In the "Rutile and the Beach" activity in *Habitat and Resources*, students debate a problem of conflicting alternatives in resources development and management set in a locale on the east coast of Australia. In *Cultural Geography* students repeatedly deal with cultural processes operating in areas outside the United States. The final unit, *Japan*, is centered entirely on one overseas area. Selection of areas to illustrate geographic ideas and geographic techniques has been guided in part by the objective of offering the students an opportunity to deal with geographic problems in non-Western countries—under the assumption that students' formal education still remains perhaps too heavily centered on aspects of Western culture. This philosophy partly underlay the selection of Japan as a non-Western focus for the final unit and the replacement of an earlier activity using the expansion of Europe to illustrate cultural diffusion by one using the expansion of Islam. Fig. 13 summarizes the parts of the earth considered within the various activities of the course.

Geography in an Urban Age contrasts with the type of course that begins with physical geography. The HSGP course is strongly oriented toward human geography, starting with urban phenomena and processes. Many activities also introduce a historical perspective. Only much later in the course are certain aspects of physical geography studied, but only in the sense of habitat, in the sense of the earth to which man may adjust but which is also modifiable by man.

Japan, the title of the sixth and final unit of the course, would seem to suggest a belated recognition that *something* of a regional nature should be included. However, while this unit is the only one which is concerned entirely with one specific part of the earth, the approach is not "regional" in the sense of that used in many high school geography courses, but rather conforms in structure and methodology to the earlier units. To be sure, *Japan* as a unit has been conceived as an opportunity for students to apply to a particular part of the earth those skills and ideas previously acquired. As so devised, the unit could serve evaluative functions for teacher and student alike in terms of how well previous ideas and skills had become assimilated. Students do acquire considerable information on the geography of Japan, but as a by-product of addressing themselves to the central theme of the unit, the modernization of Japan during the past century, and the interrelationships between the economic, social, cultural, and political aspects of the region.

While the materials of the course have been designed to involve students with a sequence of ideas, skills, and generalizations, starting with studies based on American cities and moving outward spatially to other parts of the world, to non-urban locales, and to non-Western culture areas for some of the later activities, the ideas in the course are loosely structured so that the units need not necessarily be taught in their numbered sequence. *Political Geography* could be taught before *Cultural Geography*, and *Habitat and Resources* could be sequenced earlier in the course. While the *Japan* unit could undoubtedly be worked more effectively by those students with background in geographic thinking acquired in the earlier units, it could also be used separately as part of another course, particularly in view of the fact that each of the four constituent activities are self-contained in terms of the information they provide for teachers and students, and make no explicit assumptions concerning intellectual carry-over from earlier units.

Some of the materials from *Geography in an Urban Age* would also appear to be assimilable into learning sequences in courses other than geography. Examples might include "New Orleans" from the urban unit, "The Importance of Manufacturing," "Location of the Metfab Company," "Hunger" and "Enough Food for the World"

Fig. 14. STUDENT INTEREST EXPRESSED TOWARD PARTICULAR SUBJECTS OF STUDY

	Before studying Unit 1	After studying Unit 1	After studying Unit 2
Farming	2.20	2.23	2.73
Hunger	2.84	2.97	3.07
Manufacturing	2.39	2.51	2.76
Shopping Trips	2.08	2.29	2.33

Benchmark attitude values were: 1.0—"dull"
2.0—"generally uninteresting"
3.0—"generally interesting"
4.0—"extremely interesting"

Differences of 0.6 or greater were significant

from *Manufacturing and Agriculture*, and "Section" from *Political Geography*. In view of society's increasing concern for environmental quality, the final activity in *Habitat and Resources* illustrates the potential usefulness of the materials in other courses. In this activity, "Waste Management," students work as members of a committee to make recommendations on how to deal with the solid, liquid and gaseous wastes of the New York Metropolitan Area, then consider waste problems on a global basis. The entire *Habitat and Resources* unit could be used in courses in earth sciences and biology, and in general courses on science and society.

Impact of Materials

Although the ultimate impact of the products of HSGP will not be determinable for some years, it is possible to indicate already some of the much more limited, specific effects of the course. An example shows student attitudes toward a few general subjects *before* starting the course, again after the completion of the first unit, and again after completion of the first two units. (Fig. 14).

The Local Community: A Handbook for Teachers

A second major product prepared by the High School Geography Project is *The Local Community: A Handbook for Teachers*. This rather large volume, also to be published by The Macmillan Company, is designed as a reference book for social studies as well as geography teachers contemplating the teaching of their local community. The work is designed strictly for teachers; no student materials are packaged separately. Nevertheless, it is replete with persuasive suggestions for many student activities inside and outside the classroom.

The Local Community might be used in a number of different ways. The teacher who carries out all its suggested activities would have essentially a semester course. With a more selective approach, the teacher might incorporate one or more of the suggested activities into another course in geography or one of the other social sciences. Particular activities have potential applicability in other courses, including American history and economics. *The Local Community* can also have a reciprocal relationship with *Geography in an Urban Age*. Activities in *The Local Community* offer numerous opportunities for further investigation of ideas developed in *Geography in an Urban Age*. Indeed, while the HSGP course activities frequently have sections entitled "Additional Teaching Suggestions" which point out ways of applying locally the ideas developed in the main parts of the activity, *The Local Community* often offers much greater detail and depth in the planning for the teaching of ideas and skills through reference to the local community. Conversely, activities in *Geography in an Urban Age* could be used in conjunction with activities suggested in *The Local Community*, and references to such possibilities have been inserted into appropriate places in the latter.

The volume premises that the local area is a prime teaching resource, where students can apply geographical ideas locally. Advantages of the local area include direct relevance to student's lives, accessibility, familiarity, and, finally, in view of the assumptions of familiarity, the intellectual excitement of unforeseen discoveries. Throughout, the teacher is asked to adapt the general recommendations of the reference work to the particular locale and the specific teaching needs of his own situation.

The Local Community has four sections. Part one, which is comparatively short, provides background on the major traditions in geography and on a number of the major concepts in the discipline.

Part two discusses eight steps which the teacher might take in order to prepare himself to teach the geography of the local community: (1) collection of local area maps; (2) collection of photographs, including aerial photographs, of the local area; (3) seeing the local area; (4) reading about the local area and securing assistance of knowledgeable local people; (5) acquiring more detailed knowledge and resources relating to the local area; (6) becoming acquainted with the nature and characteristics of different types of local areas—the countryside, the small town, the suburb, and the metropolitan area—through reading the essays on these subjects in the volume; (7) deciding on the geographic ideas and concepts to be taught in terms of the local area; and (8) constructing a teaching plan. The teacher is given extensive help at each step. For example, in step 1 he not only reads about the various kinds of maps that could be useful to him, but also finds out how to procure them, and even how to mount them for extensive and convenient handling in the field.

In the third part of the volume, 13 possible activities for teaching the local community are described. The discussion of the activities is organized similarly to the Teacher's Guide in *Geography in an Urban Age*. A preliminary section contains an overview statement of the general nature and purpose of the activity, a brief statement on the major parts of the activity, a statement of educational objectives, and a summary of advance planning and required materials. The following guidelines outline teaching suggestions, illustrated by models of the activity drawn mainly from either Bellefonte, Pennsylvania, or Cincinnati. The activities are organized in terms of inquiry learning and depend on the use of a variety of media for which the teacher would have to arrange in advance.

In the sequence of activities, students would observe their local community, acquire concepts through classroom discussion of their observations, practice on additional data relating to the local community in order to reinforce their concepts, and finally, attempt to solve geographic problems in their locality. The first two activities have students go into the field to observe their community. In the third activity they discuss their field observations. In the next four activities they study their contemporary community and its antecedents in terms of its population, and its economic, social, and cultural characteristics, using pertinent sources of information for classroom work. The focus changes in the next two activities from the characteristics of the local community as a whole to an examination of its internal patterns, first in terms of major land-use categories, then in terms of retail stores. In Activity 10 attention shifts to an examination of the questions of why their community is located where it is. The significance of the natural physical environment for community location is studied, together with historical, economic, and cultural factors. Activity 11, entitled "A Walking Field Trip," enables students to verify or modify ideas about their community that they have acquired previously. The two final activities outline procedures for mapping rural land use and for visiting a local farm. The long third section of the report ends with briefer sketches of other possible class activities.

The fourth section of *The Local Community* is a bibliography of references to selected metropolitan areas of the United States and Canada. The titles listed are considered appropriate for use in high school geography courses taught in these areas. Selection of references has also been guided by the degree to which treatment is "geographic," general rather than specific, and recent, except in a few cases where distinguished articles of some vintage exist but recent articles are unavailable. For teachers whose classes are located in these major metropolitan areas, the references for their area represent source materials additional to those listed in appropriate places throughout the first three sections of the volume.

Sources of Information and Materials: Maps and Aerial Photographs

The committee on Maps and Aerial Photographs of HSGP has prepared a reference volume, *Sources of Information and Materials: Maps and Aerial Photographs* which was printed in a limited edition of 3,000 copies in 1970. It is hoped that it will prove useful as a reference work to teachers of *Geography in an Urban Age*, but it was written for a multi-discipline audience at a wider range of teaching levels than that of the high school alone.

The purpose of this reference work is to tell teachers where to get additional information and ideas relating to the preparation and use of cartographic and photographic materials, where to obtain maps, statistical data, aerial and space photographs, motion pictures, filmstrips and slides on mapping and photography, wall maps, outline maps, map transparencies, globes, relief models, atlases, and related materials, matching aerial photographs and topographic maps of outstanding physical and cultural features in the United States, and interpretation and drawing equipment. The annotations which accompany many of the source listings should be helpful.

(1) Nicholas Helburn, "The Educational Objectives of High School Geography," *Journal of Geography*, Vol. 67, (May, 1968), pp. 274-281.

Chapter 3

The Developmental Process: A Personal View

Nicholas Helburn

As I reminisce about five years of deep involvement in High School Geography Project materials' development, an almost infinite number of incidents and relationships come to mind. There was a wide range of possible action. Other projects facing a similar range will want to make different choices, but it may be helpful if they know something of ours.

A number of constraints were clearly in effect as we began to develop materials in the summer of 1964. We were developing a one-year geography course to be used in social studies departments of secondary schools of the United States; we were not working with a sequence K-12 or 7-12; we were not overtly trying to fit a problems course into a composite social studies curriculum. Whatever changes we would cause would come about through the provision of new curriculum materials: text, teacher's guides, visuals, workbooks, and maybe more. Our impact would generally not come from the training or retraining of teachers or administrators.

While our budget seemed small as we started, continued support by the National Science Foundation allowed us to do what we considered to be a good job. The budget was always a factor, but the intelligence and integrity of the staff of the granting agency gave us a kind of confidence that if something were really needed for the course development, it would be supported.

The Outline

One group of decisions revolved around the outline for the course, the choice and sequencing of subject matter. In 1964 and 1965 it was a dominant preoccupation. Whole Steering Committee meetings were devoted

to it. Subcommittees met in between. Drafts were edited, criticized, edited again. Draft 3 was to be "final," but draft 2 was followed by draft 2.5 and by at least two more intermediate drafts.

Such preoccupation seems incongruous five years later. When I make a presentation now about HSGP, I rarely get a question about the sequence of topics, much less any argument about it. The urban emphasis is welcomed, but otherwise school people seem much less concerned than geographers. A few states and cities have rigidified with a region-by-region approach, but except for these, I feel a "who could care less" attitude about the outline. Part of the schoolmen's lack of concern may result from their general depreciation of sequencing; part, from a lack of concern with content as compared with process.

Regardless of the present opinion, the outline was important to geographers then and probably will be to another geography group or to a group from any other discipline as they get started. Looking back, the following attributes seem positive:

a. It was representative of geography as a discipline in the United States.
b. It recognized its complementarity with the Earth Sciences Curriculum Project.
c. It made no pretense of doing the whole job, but provided for a book of outlines to illustrate other approaches.
d. It was left flexible so that it could be adapted to the needs of the project as they made themselves known in time.

In the end, the outline gave the unit authors some sense of direction, a target to work toward, without confining them too narrowly. Later we were able to collapse eleven units into six, to reposition *Political Geography* before instead of after *Habitat and Resources*, and to abandon the *Frontiers* unit entirely.

Separateness of Units

Closely related to the outline was the question of whether the course should be a single year-long package or whether individual units should be available for sale separately. Should the final product be hardbound as a year-long course? Should we try a one-semester version? In the fall of 1964, the idea of a smorgasbord of 14 units from which the teacher could choose was rejected. The dignity of the subject demanded sequence and school adoption policies favored a full course offering. In the next year and one-half this decision was partially reversed. A year-long course was planned, to be sure, but the individual units would be available for separate purchase. This reversal must have become firm in the spring of 1966. By this time all the unit authors had been selected and it was clear we were not writing to a carefully sequenced series of ideas. Attractiveness and flexibility would both be served in publishing unit by unit. Only the ability to build one unit on another was sacrificed, but this ability had already been lost by the unit author selection process. A year or two later the value of sequential learning experiences, as against simply episodic learning experiences, was challenged in the educational press.

Because statewide adoptions require hardback bindings, we studied state textbook adoption policies. But the requirements of the adoption states were so specific that we would have had to sacrifice the idea of a multimedia teaching system to accommodate to them. Better to serve well the two-thirds of the population in non-adoption states than to serve the whole nation poorly. Further, good schools in statewide adoption states use their own money to buy non-adopted materials. Texas and Florida were on the verge of dropping state adoption or modifying it seriously. If they wanted our package badly enough, perhaps they would find a way.

Timing and Development

Timing decisions were influential at several stages in the project. The "begin more or less immediately" was built into the first National Science Foundation proposal. The invitation to submit prospectuses for writing the urban unit went out in June, 1964, two months before the full-time project office was reestablished in Bozeman. Already it was clear that there would be relatively little effort spent on: "Where does this fit into the ideal curriculum?" and, "What should be the geography sequence K through 12?" Neither were we allowing much time for training geographers in curriculum design or curriculum specialists in geography. If we couldn't learn it on the job, we would fail. As far as I know, these timing decisions were made almost implicitly, without extended discussion.

There were other timing decisions of major importance of which we were very conscious. We had to remind ourselves again and again that we didn't have time to do new research, that we had to rely on work already done by others. Twice we had to extend our time span. In the fall of 1965 it became clear we could not have all our unit authors working during the 1965-66 school year. In the winter of 1967 we realized that the editing was going so slowly we couldn't meet our projected completion date.

When the severe budget cutbacks were imposed in the late summer of 1968, it was timing that prevailed: drop everything else but finish the course during the 1968-69 school year! And we almost did. That completion was achieved only by the sacrifice of trials that would have been very valuable and by excluding some important half-finished materials.

The decision to close down the project in the fall of 1970 was another timing decision. As an ex-member of the staff, I find it easier to understand. The decisiveness came from the Steering Committee. I felt it most clearly from the chairman. That decision traded off the potential contribution of the continuing organization for the sense of well-being in having done a job and the avoidance of the risk of an on-going bureaucracy making work for itself and building itself into a professional organization.

How Many and What Kinds of Materials?

A whole cluster of decisions answered the question: How many materials? In the beginning we spoke of a complete teaching system. The idea of a "demonstration" course, recorded on film or tape, had already been dropped by April, 1964, when I was first associated with the project. We urged unit authors to include everything appropriate. Motion picture films were soon questioned and finally dropped, as staff found that teachers seldom could assemble film, projector, projectionist and students in a darkened room at the right time for a given learning experience.

Transparencies for the overhead projector were soon in. Slides changed to filmstrips and tapes to phonograph records as economies in commercial production. Topographic maps, air photos and stereoscopes survived on the enthusiastic recommendation of staff who had taught the "New Orleans" activity. Unit authors were unenthusiastic about the prospect of an atlas and the idea was dropped. Of a whole series of reference volumes, only one is contracted for publication. There are no wall maps, no programmed versions, no artifacts. Compared to a textbook, *Geography in an Urban Age* is a pretty complicated package. But we tried to exclude anything which did not contribute directly to student learning.

Another question in the "how many?" cluster related to how long the course should be and how much optional material should be provided. A minimal course could be

supplemented by a teacher's own inserts. A slow teacher, or a teacher with a slow class, would not get through a full course designed for the median case. The separability of units helps solve the slow teacher's problem. The editing team worked with the rule that about 130 per cent of what the median teacher would cover was about all we could expect The Macmillan Company to include.

A commitment implicit in a materials approach to curriculum change is that everything be teachable. No magic powers, no special knowledge, no cruel or unusual compulsions should be needed to bring students through the course successfully. It was a working axiom that anyone with "reasonable intelligence and good will" could teach the materials successfully. The activities had to be attractive to both student and teacher. Part of the attractiveness comes from format and style, part from choice of subject—sports, for instance. Much comes from the intrinsic power of the ideas and skills, the usefulness and relevance of what is learned. Still more lies in the variety of classroom procedures, especially those loosely categorized as "inquiry."

But a commitment to inquiry is a relative thing. The most nearly perfect form of inquiry is a self-motivated scholar in the library, the laboratory or the field. It is a long way from such open inquiry to the short cognitive leaps involved in the matching of maps of manufacturing to paragraphs describing the industries.

A variety of classroom procedures is part of what makes a school year pleasant. We were reaching for as attractive a set of materials as we could design consistent with the significance of the learning. We urged unit authors to range widely into simulations, role-playing, gaming, modeling. They responded with an array of imaginative teaching strategies.

School trials with teachers in ordinary school situations let us know what worked easily, what worked with difficulty, what didn't work. Revisions gave us a chance to try to take the bugs out. The editorial team was conscious of the importance of teaching strategies and sensitive to preserving the variety thereof.

Creativity and Editing

Where the idea of decentralized writing teams developing separate units came from is not clear to me. The first National Science Foundation proposal specified that we would produce two units during the first year. The invitation for propectuses of June, 1964, specified that the author could work either at project headquarters or in his own setting. So did subsequent invitations. Only one unit author team came to Boulder.

The Biological Sciences Curriculum Study and the Earth Sciences Curriculum Project had relied upon writing conferences during the summer. I can remember recoiling from the idea of the writing conference, both because of the pressure under which people worked and because of the terrible administrative problem of running it. It was only after our own pattern had evolved that I can remember putting into words what I consider its most important advantage—the fact that the scholar has time enough to invent and develop innovative teaching strategies.

Arthur and Judith Getis worked nearly full time from November, 1964, to June, 1965, on the first urban unit. They had no model to work from. The project office consisted of a director, an editor and a secretary. It could urge variety and inquiry, but could be of little constructive use. As the Getis's started from the very beginning, the choices of what and how were extraordinarily difficult. They did get support, suggestions, and direction from Dana Kurfman, then social studies expert in the Educational Testing Service nearby. The Steering Committee could and did criticize the preliminary efforts. But it could offer no help in reaching the creative synthesis

out of which came the "City Site" and "Portsville" activities.

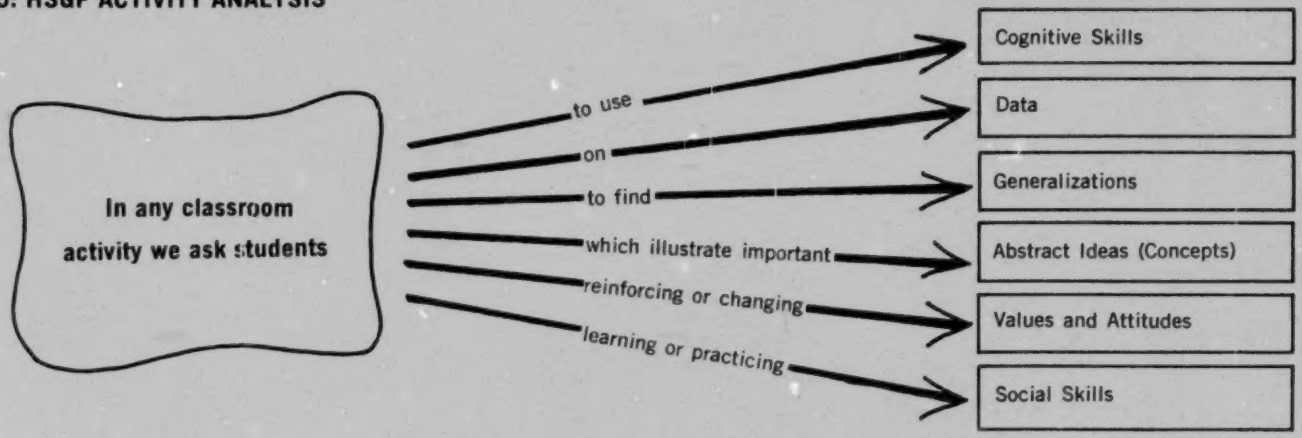
Most of the other unit authors took six to eight months to complete their first and second drafts. Howard Stafford established a particularly effective collaboration with Leonard Lansky. After deciding to avoid trying to teach the origins of manufacturing regions, they were able to fashion a most instructive role-playing simulation on the location of a manufacturing plant. Roger Kasperson, too, found an imaginative and interested psychologist in Joseph Bentley. Further, he used the service of Abt Associates, experts in the design of instructional games. Richard Hough and Max Kirkeberg spent hour after hour arguing the educational worth of every proposed activity with a small panel of experienced social studies educators including the late Hilda Taba.

I never did understand the nature of the miracle which took place in Lawrence, Kansas. Walter Kollmorgen, the grand old man of the Department of Geography at the University of Kansas, made the commitment in the name of the whole department to do the agricultural unit. I felt that he acted from a sense of duty to the profession and from pride in the competence of his department in agricultural geography. But Walter Kollmorgen was then stepping out of the chairmanship of the department. Further, his mode of teaching was didactic in the finest tradition of classical scholarship. It remains for some astute historian to describe how Duane Knos emerged as the dominant member of the group which turned in a most imaginative manuscript.

To dream and sort and discuss and reject and modify and write and rewrite and try and watch and recast and rewrite and redream and resort and discuss again . . . takes months, not weeks. Another way of saying it might be that we were taking academic geographers and asking them to learn about high school social studies and the best of the science and arts of pedagogy and then combine their new learning with a few important ideas and skills from their specialty in geography. It takes time to learn and mix the skills, to conceive, grow and bring forth imaginative activities for the classroom.

At the start none of us had a clear idea of the eventual division of labor between the unit authors and the evaluation and editing team. The first "editing confer-

Fig. 15: HSGP ACTIVITY ANALYSIS



ence" in the summer of 1966 achieved little more than technical editing. It wasn't until Dana Kurfman had put together a small evaluation staff in the project office and Donald Patton had pulled the rest of us together as an editorial team that the final flavor of the course began to emerge.

One breakthrough which helped the editing-revision process was the recognition that every school experience has multiple effects. We had been trying to identify the objectives toward which we were teaching. The taxonomy of objectives according to Bloom, Krathwohl, et al., had been interpreted in an exclusivist manner, one objective at a time.

As Anne Manheim and I were trying to identify all the generalizations of the course, in the vain hope of arranging them in some proper order for teaching, it became clear that every activity has multiple objectives, several levels of the taxonomy being represented.

The activity analysis system, derived from this recognition, was written in November, 1967, for the *Journal of Geography* of the following May. It continued to develop into the form shown in Figure 15. Activity analysis for the worst sort of rote learning appears in Figure 16. Activity analysis for a part of the "New Orleans" activity is depicted in Figure 17.

Anyone who has taught the "New Orleans" activity will be sensitive to the fact that the latter part of the activity goes on to skills of inference and the reconciliation of discrepant data, generalizations about race and segregation, about the dangers of improper inference and attitudes about prejudice.

In the revision process, the evaluation data from school trials and the opinions of geographer consultants could be applied to the several objectives of any activity. Where problems arose one part could be modified without disturbing the other parts too much.

In the political unit, for instance, we had too many activities with data derived from New England. The activity which taught about the political and administrative territories of the city could be shifted relatively easily from Boston to London.

The project office developed several additional activities needed to achieve balance and sequence: "City Shape and Structure," "Cities with Special Functions," "Migrants to the City," "Waste Management." In some cases, it was feasible to farm out revisions, (government

Fig. 16: ROTE LEARNING ACTIVITY ANALYSIS

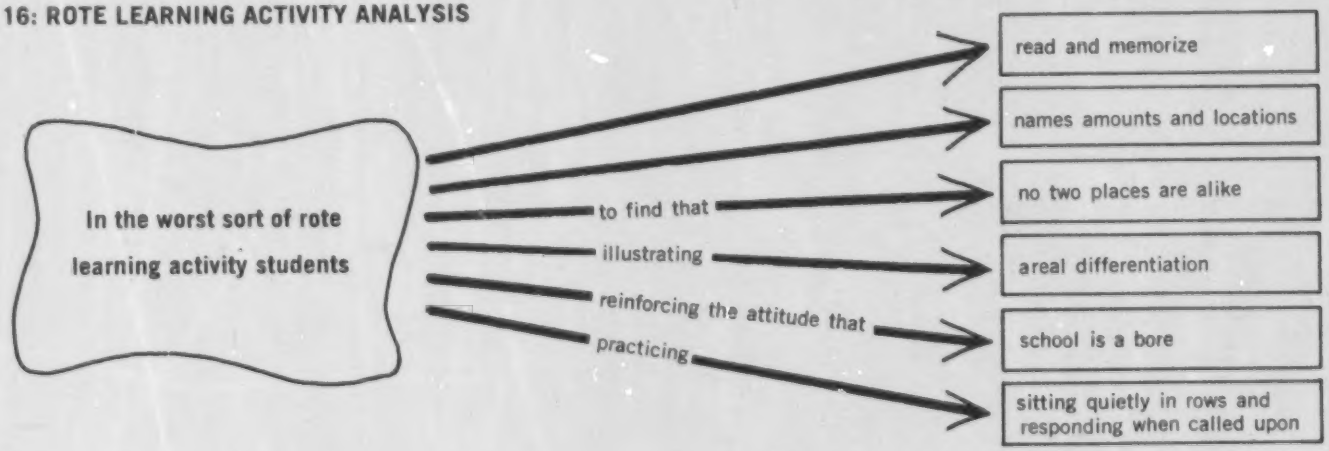
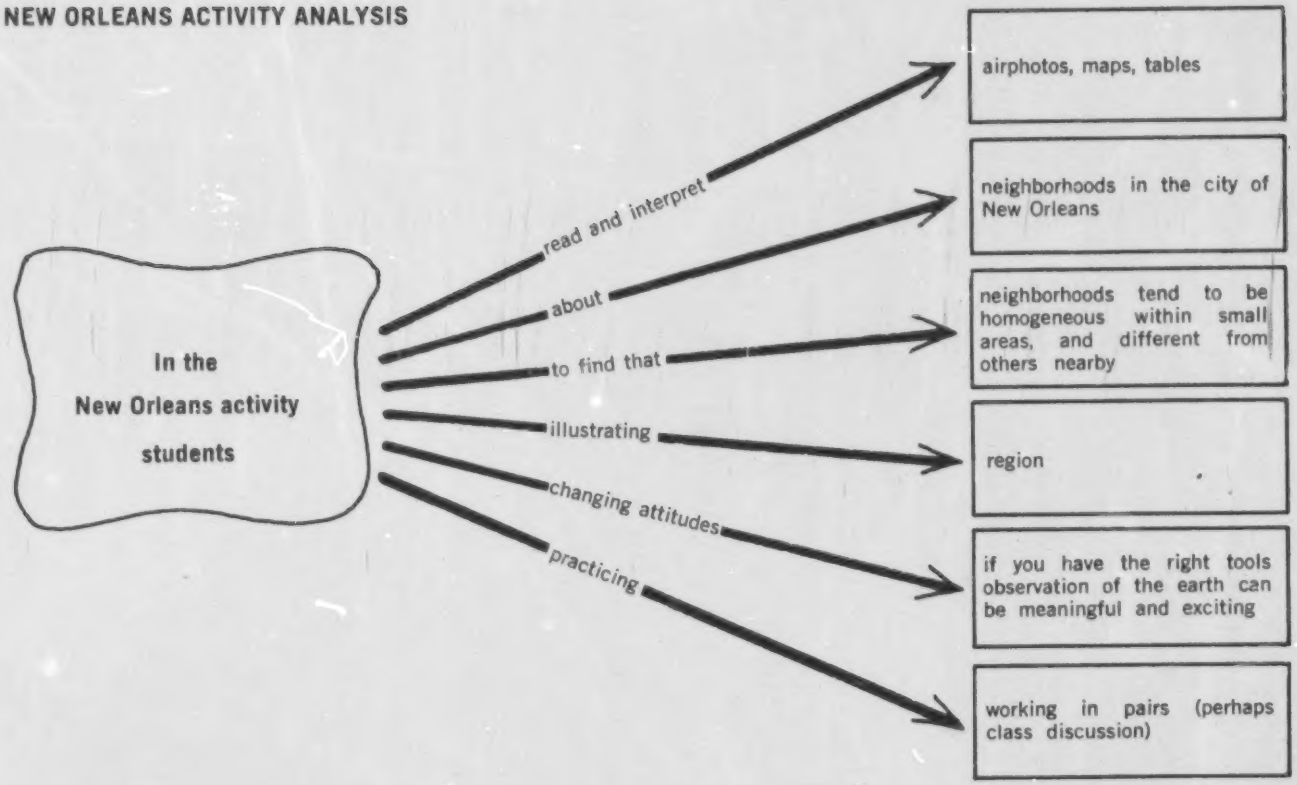

In the worst sort of rote learning activity students
read and memorize
names amounts and locations
to find that
no two places are alike
illustrating
areal differentiation
reinforcing the attitude that
school is a bore
practicing
sitting quietly in rows and responding when called upon

Fig. 17: NEW ORLEANS ACTIVITY ANALYSIS


In the
New Orleans activity
students
read and interpret
about
to find that
illustrating
changing attitudes
practicing
airphotos, maps, tables
neighborhoods in the city of New Orleans
neighborhoods tend to be homogeneous within small areas, and different from others nearby
region
if you have the right tools observation of the earth can be meaningful and exciting
working in pairs (perhaps class discussion)

of metropolitan London or rutile mining activities), but most of it had to be done in the project office. Attempts to farm out editing generally were fruitless.

The choice of powerful ideas, the creativity in finding varied ways of learning them, the choice of appropriate data and illustrations, were the forte of the unit authors. The project office specialized particularly in school trials, comparative analysis of the feedback, putting the widely different parts into a more or less coherent and consistent whole. The final flavor of the course comes from a kind of common mind-set of the senior editing-evaluation team: Donald Patton, Nicholas Helburn, Elizabeth Johnson, Dana Kurfman, and Robert Richburg.

Until Donald Patton was able to weld this team into a functioning unit, few activities took final form. The urgency of completing the course in the 1968-69 year was the inability to keep the team together past the summer of 1969. What to keep? What to let go? What to change? How to change? These were decisions and changes finally made by that group.

Target Audience

Among the widest differences from one unit author to another was the range in reading difficulty of the manuscripts. At the end of the first limited school trials in the winter of 1966, it became clear that we would have to make some further decision about the reading ability of the target audience. Ninth and tenth grades were already the chosen grade level based on the experience of the first two years of the project. But some teachers reported that the reading level of the experimental materials was too high for their students. At least one teacher asked to be excused from further trials because the materials were "not verbal enough," i.e., not enough written work, outlining, precis writing, and the like.

Some perspective on the problem came in the fall of 1964 when we were trying to agree on an outline. I had circulated to Steering Committee members a list of criteria on which an outline might be rated and asked for ranking. It was clear that rigorous, good quality geography was high among Steering Committee's values about the course, and that there might be problems in reaching across the whole spectrum of ninth and tenth graders. As the course finally developed, however, it was abundantly evident from school trials that most of the materials could be used by almost all students at these grade levels, although the prose phase of the materials appeared to be at a level most appropriate for the upper 60 or 70 per cent of the school audience.

Quite a different kind of ability was involved in the problems of the *Networks of Cities* unit. Here, abstract ideas from quantitative approaches to spatial analysis were being explored. Teachers in the informal trials in Columbus had done quite well with them. In school trials on the national level, however, when teachers had no personal inspiration from the unit authors, they showed up relatively poorly.

Several of the activities from this unit survived. The last to go was the derivation of hexagons as ideal trade areas. We made a major effort to keep the central place hexagons in. We were never quite sure whether we had pushed teachers and students too far toward abstract thinking or whether geographers have some unsharable enthusiasm for hexagonal hierarchies. In the final analysis the costs of boredom, confusion, and frustration seemed to outweigh the benefits of mastery of the geometry of spatial analysis.

National Science Foundation staff never showed much enthusiasm for improving the education of dull students. But they were intrigued by the possibility that we might turn up and "turn on" some able students among those who were not doing well. Geography had more than its share of students doing poorly. In many geography activities, graphic symbols replace both words and numbers. What better place to identify bright underachievers? What better way to take care of some of the 30 to 40 per cent of students not fully reached by our main effort? The proposal containing this logic was approved by the Steering Committee, fall of 1965 and winter of 1966. The program was to be activated in August, 1967, the second year of a two-year budget starting in the fall of 1966.

At the first Steering Committee meeting after the program was activated (October 1967), even before the details had been thought through, the program was repudiated. The psychological complexity of underachievement was given as a major reason for the decision. The staff was stunned. We felt that a very good program was being dropped. Whatever other reasons were involved, including budget and time, the fear of tarnishing the academic respectability of HSGP must have played a part. The decision to drop the "bright underachiever program" closed the explorations.

Commercial Feasibility

No one in the project was interested in huge profits, but an implication of National Science Foundation-encouraged publication procedures was the feasibility of commercial publication. We were aiming for that relatively narrow zone where the price is low enough so schools can afford the materials but high enough to allow the publisher a markup. Without the latter, he would have little initiative toward salesmanship. Without the former, his salesmanship would be ineffective.

Few editing decisions were dominated by this commitment to the normal publication-marketing-adoption process, but the commitment was always in the back of our minds. The effort to engineer the Portsville board to an economical form was an example of direct action by the project toward commercial feasibility without giving up an important teaching strategy.

It is a little ironic that the only conscious introduction of an activity to make a unit commercially more saleable was "Migrants to the City," an activity on the black ghetto in Chicago which probably would have been considered too controversial if it had been proposed by Arthur Getis in 1965.

LESSONS

For those who venture into the dimly lit corridors of curriculum reform, we offer the following:

1. Curriculum reform consistent with the best of both the discipline and the schools is possible. Schoolmen have nothing against powerful and significant ideas. Academics have no valid objections to materials in highly teachable form.

2. Real curriculum reform is neither easy nor cheap. It takes more time and devotion than anyone on the outside can understand to write good material that *anyone* can teach.

3. The inertia is enormous. People's images as well as their behavior change slowly, if at all. Any one effort should focus its energies on the parts of the system it really hopes to change.

4. While we know a good deal about the ingredients of curriculum from learning theory, theory of instruction, and curriculum theory, we have no recipes for putting them together. Curriculum writing is an art form which involves creative synthesis. Identifying error and correcting it distinguishes good projects from mediocre ones. As wide a range of imaginative people as possible should be drawn upon. A small group should edit toward a consistent whole.

5. Ends and means are inseparable. Content and process are both integral to school learning. Every activity has multiple objectives. Vested interests and sacred cows, both of the discipline and of education, must be dealt with summarily.

6. The extrinsic reward system of higher education discourages scholars from participating in curriculum development. The intrinsic rewards are so great that for many it does not take much experience before they are "hooked."

Chapter 4

The Role of Evaluation

Dana G. Kurfman

Robert W. Richburg

Evaluation played a vital role in the curriculum development work of the High School Geography Project. Evaluation efforts conducted during the writing of *Geography in an Urban Age* contributed insights that ultimately resulted in significant improvements in the teachability of the units. Achievement and opinion data were used to determine what revisions to make. This information was then relayed back to the unit developers and course editors.

During the several years evaluation was utilized in the development and refinement of HSGP materials, much was learned about the process and problems of evaluation. This learning process resulted in a gradual refinement of the evaluation techniques the project employed. It is in the interest of reporting these learnings that this chapter is written.

Each unit in the HSGP *Geography in an Urban Age* course followed a cycle of development, evaluation, and revision which was sometimes repeated several times. The initial version of each unit was prepared by a unit author, who was guided, in part, by a development team which included other geographers as advisers, high school teachers, and educational specialists. When the initial version of a unit had been developed, it was subjected to an informal school tryout. These informal tryouts usually involved about five teachers and 300 students. They were held in schools easily accessible to the unit author. During these tryouts, project evaluators collected questionnaire and test data and reported their findings to the developmental team.

After the original units had been trial-tested in the informal trials and then revised, the next stage in the development-evaluation-revision cycle was an expanded school tryout. In these limited school trials 25 to 75 teachers from around the country taught from three to six units. These tryout situations permitted a more systematic analysis of the results than was possible in the informal school trials. At this stage, similar kinds of test and questionnaire data were collected and analyzed by project evaluators as in the earlier informal school trials, but were transmitted to the editors in the project office rather than to the unit authors and the development teams which had initiated the units.

While there was always an intention among the project staff to hold a national tryout of the entire *Geography in an Urban Age* course, the lengthened period of course development prevented this from taking place. This type of trial is still needed, however, in order to evaluate the effectiveness of the completed course.

Several things were learned about the procedures utilized in the various trials conducted by the project. For example, the group evaluation sessions held during and after the informal trials proved an effective way for the unit author to obtain feedback for purposes of revision. Tryout teachers could impress him with some of the major problems of the unit. However, his presence

apparently tempered the forcefulness of teacher criticisms. He also must have helped teachers orally in ways that never appeared in the teacher's guide. In any case, some units that ultimately proved very difficult for teachers to teach received favorable ratings in these initial trials. This experience confirmed the need for less personal evaluation procedures to supplement group evaluation sessions.

During these trials the project also discovered some interesting things about the use of test data to evaluate curriculum materials. From the beginning, project evaluators were aware of the relative uselessness of scores summarizing performance on a large number of concepts and abilities. Rather, the helpful information for revising course materials was assumed to be test data on specific concepts and abilities. Such test data could then be related to the parts of the materials responsible for developing the specific understanding or skill. Thus, if test items were constructed to measure student understanding of important concepts in a unit, then pre-instruction test and post-instruction test comparisons should have suggested judgments about the effectiveness of particular teaching procedures and materials designed to convey these concepts.

However, the promise of this model for using test data to revise materials was never realized in practice. This may have resulted, in part, from the way the units were developed and the complexity of the ideas imbedded in them. The neat relationship of a) ideas to be learned, b) procedures and materials to bring about the learning, and c) test questions to measure the learning, seldom was established. Units were not developed by first identifying an explicit set of ideas and then devising educational activities so students would learn the ideas. In many cases it proved impossible to devise questions to test student attainment of the abstract ideas and cognitive skills comprising an important part of the unit objectives. In other cases it was not until the units had been written and tried out in classrooms that the specific learning outcomes of the material could be pinned down and agreed upon sufficiently for the evaluators to be able to write test questions. Consequently, evaluators had a difficult time writing relevant test questions in advance of the first trials. Many of the test questions that were used were ultimately judged to be poor measures of the complex ideas in the units.

Another problem in using test questions to revise educational procedures and materials which emerged was that of interpreting the results. Questions about complex ideas showed considerably less gain from pre-instructional testing to post-instructional testing than did questions about specific terms and information in the instructional materials. Consequently, it was difficult to interpret the degree of improvement obtained by comparing pre-instruction scores with post-instruction scores. Relatively small gains of perhaps five per cent may have resulted from the complexity of the idea measured, from unperceived defects in the test questions, or from a failure of the instructional procedures and materials to do their job. The difficulty in attributing poor test results to the ineffectiveness of materials and procedures makes their usefulness in curriculum revision questionable.

The Use of Questionnaire Data

Questionnaire data, on the other hand, proved easier to interpret and very useful for the several evaluation needs of the project. Comparative evaluation information was compiled by asking teachers about the worth of the materials compared to what they normally used in teaching geography. Students, too, contributed their perspective to judgments about the value of project materials by indicating how interesting and how worthwhile the lessons were in comparison to what they did in other classes.

Questionnaires were also used effectively to elicit teacher opinions concerning the appropriateness of

student readings, the clarity of maps and graphs, or the effectiveness of discussion questions that were provided. In this way evaluation was useful in deciding what specific parts of the materials were most in need of revision and what the nature of the revision should be.

The Portsville activity of the *Geography of Cities* unit provides a good example of the way questionnaire data has functioned to improve HSGP materials. In the original form of this activity, students listened to their teacher recite the narrative of the history of Seattle and then used a large Modulex board and plastic Lego pieces to construct the city the way it might have looked in three different time periods of American history. The success of the activity can be attested to by the fact that when students were asked on a questionnaire to indicate how interesting they thought it was, 51 per cent said it was extremely interesting, 45 per cent felt it was generally interesting, while only 8 per cent felt it was generally uninteresting, and 3 per cent felt it was dull. (1)

Despite the obvious success of the activity in terms of student interest, teachers on their questionnaires offered suggestions about changes in the materials that might heighten student interest. Two comments which were contained in an Educational Testing Service report, prepared in 1966, illustrate the types of teacher statements that proved to be invaluable in the subsequent revisions of course materials:

1) "The . . . (Portsville) narrative might be reprinted for students to aid them in their construction of the board. . . ."

2) "Many teachers and most observers noticed that most students who were not actively participating in building the large map were less stimulated than those who were." (2) These comments led to two significant changes in the Portsville activity during the revision and editing process that took place prior to the 1967-68 school trials. First, the narrative of Portsville's history was rewritten in an interesting style and put into the Student Resources materials. Now the student could find the information he needed for himself rather than having to listen to the teacher drone on about things that might be of little interest to him. Second, the single large board was replaced by four smaller ones. This facilitated the involvement of all the students in the class rather than a select few.

The effects of these changes are recorded in the evaluation report for the 1967-1968 school trials in which the project evaluators note:

> ". . . both teachers and students agree that Portsville is by far the strongest activity in the unit. Moreover, a comparison of these teacher ratings with comparable ratings from last year and the year before suggest that this activity has been improved over previous years." (3)

The optimum number of teachers to use in the tryout of materials and the way they are selected have been of concern to the project. From twenty-five to thirty teachers usually helped in each school trial. Although they were volunteers, and therefore were probably not representative of typical geography teachers, the group one year were probably very similar to the group another year. Their students were concentrated in the ninth and tenth grades and had an average verbal aptitude of about the sixtieth percentile.

As a result of this stability in the tryout groups of teachers and students, project evaluators could make comparisons of their questionnaire responses from one year to another. For example, as a part of the questionnaire data collected in the 1967-68 school trials, students were asked to indicate how interesting they felt each activity to be. Their multiple choice responses were summarized and an average estimate of student interest was determined for each activity. Some representative activities and their interest ratings on the 1967-68 trial, together with the ratings these same activities received in

1968-69 trial after interim editing and revision, are shown in Fig. 18. A 4.0 value would represent the highest average value on the interest index that was possible and a 1.0 would represent the least interest that could be registered.

Fig. 18. STUDENT ESTIMATE OF INTEREST

Activity Title	1967-1968 Student Estimate of Interest	1968-1969 Student Estimate of Interest
Portsville	3.34	3.65
City Location and Growth	2.98	3.13
A Lesson from Sports	2.81	3.16
Models of City Growth	2.72	2.75

In each case the revision resulted in improved student interest, though considerably more so in some activities than in others. Clearly such comparative data from year to year is of value in assessing the editing changes that have been made.

It was HSGP's experience that a small number of articulate teachers who were encouraged to respond to open-ended questions provided far more valuable feedback for revision than large numbers of more average teachers. A very high percentage of the major revisions suggested on the basis of school trials came from only three or four teachers. Curriculum projects in the future could save themselves considerable time and expense by locating these kinds of teachers early in the developmental process and depending upon them for revision information. While they cannot provide satisfactory information about how the materials will be accepted in representative situations, they can help iron out teaching problems exceedingly well.

Evaluation in the Total Development Effort

The lessons that project evaluators learned have not all been in relation to information retrieval. Much, too, was learned about the way evaluation fits into the overall functioning of curriculum development. One important conclusion in this regard was that evaluation programs necessarily create tensions within curriculum projects because evaluative efforts compete with the curriculum development efforts for staff time and resources. As the evaluators organized school tryouts of new or reformulated materials, teachers and classes had to be selected well in advance of the actual trial. Once the project was committed to providing materials to these trial teachers at a specified time, the authors or editors responsible for the material to be tried had to produce in keeping with that schedule. While deadlines are nothing new, the anxieties of people who were responsible for developing creative instructional materials were justifiable. When time constraints were imposed on developmental efforts by the evaluators, there was a natural tendency to feel that the cart somehow was pulling the horse.

Time constraints worked in the other direction too—from developers to evaluators. In preparing for school trials, evaluators were not able to complete the needed test and questionnaire instruments until the curriculum developers had virtually completed the edition of the materials to be tried out. Then, at the conclusion of the school trials, results had to be transmitted rapidly and meaningfully to the curriculum developers. To avoid burying developers in meaningless data, project evaluators had been careful to derive explicit recommendations from the data. If recommendations had not been available at the time curriculum developers had to decide

about the extent and nature of the revisions to be made, these decisions would have been made on the basis of intuition rather than data.

From these observations it is clear that evaluation played a significant role in the development and revision of HSGP units. Throughout the experience it was necessary to modify many of the evaluators' assumptions and procedures. In the face of practical considerations a research model of evaluation gave way to a practical decision-making model. If evaluation is to be useful in improving educational materials and practices, it will need to continue in this pattern.

1. *ETS Evaluation Report, Intra-Urban Unit*, March 5, 1966, Appendix C.
2. *ETS Evaluation Report, Intra-Urban Unit*, March 5, 1966, p. 17.
3. *Growth of Cities Evaluation Report*, March 19, 1968, p. 8.

Chapter 5

Teacher Education and Dissemination of Information

Ronald J. B. Carswell

In addition to its development of new curriculum materials, the High School Geography Project assumed a responsibility for teacher education. This chapter offers an account and a preliminary assessment of the degree to which each of the several methods of teacher education with which HSGP experimented appeared to have achieved its particular purposes. The chapter concludes with a look beyond teacher education toward the project's programs for information dissemination which sought to enlarge the awareness and to increase the understanding of HSGP, its objectives and product.

Teacher Education

The means of helping teachers to deal with new geographic ideas changed radically during the life of the project. In 1962, the Joint Committee committed itself to experiment with the development of potential elements for a course. In the experimentation, a group of teachers worked closely with a geographer-consultant. The expectation was that the teacher and the geographer would provide differential input which could result in innovative approaches to the teaching of geography. The teachers were free to introduce geographic concepts appropriate to the background and interests of their own students.

The teacher education kits, and the conferences fashioned by HSGP after 1967, also reflected a conviction that innovative geographic education requires inputs of geographic concepts and teaching strategies which the teacher may combine as he wishes in his own classroom. These more recent approaches differed from the earlier ones in that the teacher or apprentice teacher became

involved with the HSGP materials by using them, and could then adapt both content and strategies to his particular classroom situation. He was not expected to create new materials or methods in the first instance; rather, he was encouraged to use HSGP products as a point of departure.

In retrospect, it might be said that the idea of providing teachers with supportive materials and asking them to develop innovative courses could be much more effective in 1970 than it was in 1962. Teaching is a high-risk activity and teachers tend to use those materials and methods with which they feel most familiar and comfortable. New approaches to content and instructional procedures have to demonstrate clear success in order to be quickly adopted. The experiences of 1962 and 1963 indicated that to provide teachers with an advisory paper on geography and to give them access to a geographer for content information was not a highly productive way of developing new materials. A more effective method was for geographers and cooperating teachers to design course activities which then were tried in the classroom, evaluated, modified in response to the evaluation, and then made available to teachers for appropriate and often imaginative use.

From 1963 to 1967, the major efforts of HSGP were centered on the production of materials. Consequently, teacher education played a minor role and was accomplished mainly through presentations by the project staff and unit authors to NDEA institutes and other interested groups of teachers.

Teacher's Guides

As the unit materials were produced, the teacher's guides were developed and modified on the basis of trial teachers' comments. Although not consciously developed as such, these guides may be considered part of a teacher education effort as they enable teachers unfamiliar with the concepts and instructional techniques used in the course to teach the units successfully. In fact, the placing of High School Geography Project materials in a school may, in itself, be a powerful teacher education force. The results of a questionnaire circulated in the spring of 1970 indicated that at least 80 per cent of all HSGP trial teachers were still using the trial materials and that at least 75 per cent of them planned to buy the new commercial version. Discussion and correspondence with teachers using HSGP materials suggested that the number of geography classes in their schools have tended to increase and that teaching strategies from HSGP materials have been used to modify other social studies courses.

Short Orientation Workshops

The first large-scale school trials of materials for part of *Geography in an Urban Age*, which were held in 1966-1967, were preceded by a five-day workshop for one-half of the participating teachers. These teachers were involved with the materials and familiarized with the content and inquiry teaching methods of the units. At the conclusion of the school trials, the student performance on a post-test for each unit was analyzed. No differences were found between the students whose teachers had attended the five-day workshop and the students whose teachers had not attended such a workshop. The project concluded that the value of this type of short orientation workshop was questionable and that other types of teacher education projects which reached a larger number of teachers should be initiated. The results of the workshop would also seem to suggest that the teacher's guides had been sufficiently effective as a means of teacher education to compensate for any disadvantage the group of teachers not participating in the workshop may have had at the start of the school trials.

Conferences and Institutes

Several types of conferences and institutes have been used by HSGP to reach large numbers of teachers. In 1967, 1968, and 1970, a series of briefing conferences were held which included directors of summer geography institutes, social studies coordinators from various school districts, and teachers of teachers. The purposes of these conferences were to acquaint the participants with HSGP materials and to help them incorporate the materials and associated teaching strategies into their own teacher education programs. Participants were involved in selected activities from project materials and were asked to analyze the materials in terms of how they could be used in their own teaching situations. Another aspect of these conferences was the use of a communications specialist to encourage the free expression of opinions so that group communication would be facilitated.

A second type of conference approach has been through the development of leadership teams. In the summer of 1968, teams of five members each from five of the larger school systems in the United States were invited to a four-week conference. These teams, composed of two classroom teachers, a social studies department chairman, a coordinator of social studies for the school system, and a social studies methods teacher from a college or university, had an opportunity to study HSGP materials and to teach them to a group of high school students. Once the teams were thoroughly familiar with the project's philosophy and materials, each team designed a plan to introduce HSGP materials into its local school system. Each plan included suggestions for demonstrations and in-service workshops to familiarize teachers with the materials and approaches of *Geography in an Urban Age*. Throughout, the whole experiment was based on the assumption that teams with prepared plans of action would have a greater chance of success in implementing the new geography materials than would single individuals.

By the summer of 1969, the idea of leadership training institutes was so well established that training sessions supported by the Office of Education were held in many centers in the United States. An evaluation of the successes and failures of these leadership teams indicated that there were some spectacular successes in the implementation of High School Geography Project materials and some notable failures. For example, teams from North Dakota, California, Oklahoma, and other states sponsored workshops, aroused the interest of state department of education authorities, and assisted Macmillan salesmen in making presentations to schools. Other teams failed to keep in touch with each other or met with such apathy or indifference that their efforts at innovation failed.

Factors which seem to have influenced the success or failure of the leadership team were the cohesiveness of the team, the number of other commitments the team members had, the support that their in-service plans received from the school administration and from external groups such as conference organizers or other leadership teams, and availability of the innovative materials.

As HSGP staff members and consultants gained experience with the organization of conferences or institutes, it became apparent that their format was critical. A requisite for a successful institute was a pre-planning session, where the staff reached agreement on aims, objectives, and organization of the meetings. Once the conference began, an initial planning session attended by staff and participants also gave the participants an opportunity to state their expectations for the conference, and conference goals were then set in accordance with these expectations. Such a planning session came to be regarded as indispensable by the staff since experience had shown that traditional institute designs, where

Conferees participating in an HSGP activity from *Geography in an Urban Age.*

participants follow pre-set schedules organized to give them a thorough grasp of the content and some understanding of the teaching procedures in HSGP materials, were not very successful in stimulating widespread or effective subsequent use of the new course materials. Since participants brought a variety of backgrounds to the conference, the goal-setting activity enabled the whole group to see the range of expectations that the conference might satisfy.

Once the objectives for the conference had been posted and ordered in some way, the group proceeded to activities which helped to gain the stated objectives. These activities included field trips, study and analysis of HSGP materials, participation in activities from HSGP units, listening to visiting experts, viewing films, or teaching HSGP activities to students. The conference was so organized that at times the group sat as a whole, while at other times concurrent sessions were held. The sessions had a minimum of lecturing or one-way communication and a maximum of active involvement for each participant.

During the conferences each work session was usually followed by a processing session, attended by the whole group, where participants reported on their progress and evaluated the effectiveness of their learning. Questions such as, "Where are we?", "Was this the best way to do it?", "Did you like this activity?", and "Where do we go from here?" enabled the group to assess their learning and plan for future activities. At times, however, groups were slow to express their actual feelings or had difficulty in communicating with each other. When this occurred, specific exercises designed to increase communications and encourage all participants to become involved were used. (1)

At the conclusion of the conference a final evaluation of the conference experience was made either on an individual or a group basis. Participants were not only queried as to what they had learned, but they were also asked to rank the conference in relation to similar types of experiences. Information from these evaluations was used by the staff to modify other conferences. The key to HSGP conferences has been flexibility and involvement of the participants with learning materials.

Teacher Education Kits

While the institute approach to the problem of teacher education seems to have been an effective one, the major teacher education emphasis in 1969-1970 was the development of self-contained kits of materials which could be used when the work of the project was completed. The kits were seen as a practical way to

influence sizable numbers of teachers without incurring the costs which accompany large conferences and workshops. The kits combine many of the best aspects of the *Geography in an Urban Age* course and successful conferences. The materials are carefully organized in sequence while requiring a high degree of participation and involvement.

The three kits are: "Using Simulation to Involve Students," "Using Media to Stimulate Inquiry," and "Using Evaluation to Improve Instruction." The format of the kits, with instructor's manual, participant's manual, and other materials, resembles HSGP course materials. Each kit is based on the assumption that the best way to learn the advantages and problems of any teaching strategy is to experience them. Consequently, participants are involved immediately in an activity chosen from HSGP course materials. Following the activity, the participants analyze the teaching strategies that are used. Next, they view a video tape showing a typical class using the activity which they have experienced. In the final part of the kit the participants are given an opportunity to apply their knowlege of the instructional strategy to another problem or to other content. Figures 19, 20, and 21 on pages 49, 50, and 51 respectively, present the overview charts for each of the kits.

During the winter and spring of 1970, 16 pre-service social studies methods experimental classes, 16 pre-service geographic methods experimental classes, and 16 geography and social studies in-service groups of teachers scattered throughout the United States used the kits.

Fig. 19: Overview Chart—USING SIMULATION TO INVOLVE STUDENTS

Parts	Purpose	Procedures	Materials
I Participating in a Simulation 75 minutes	Introduce participants to a simulation by involving them in an exercise.	Participants form groups and assume roles to decide on the best location for a metal fabricating plant.	Role descriptions containing various tables and value information.
II Analyzing a Simulation 30 minutes (plus 20 minutes of outside reading)	Familiarize participants with the elements and procedures involved in a simulation exercise.	Through a reading and class discussion, the participants gain an understanding of simulation characteristics.	"Analyzing a Simulation" reading.
III Clarifying the Role of the Teacher 65 minutes	Clarify the role of the teacher in a simulation exercise.	Participants observe two high school classes doing the factory location simulation. Discussion focuses on the role of the teacher in a simulation.	Two video tapes of the factory location simulation. Written summaries of the video tape.
IV Applying a Simulation Model 80 minutes	Give participants experience in applying their knowledge of simulation to a new exercise.	Participants analyze an exercise that varies from the factory location simulation.	Video tape of the "Portsville" simulation activity. Synopsis of the complete activity. Written summary of the video tape.

Fig. 20: Overview Chart—USING MEDIA TO STIMULATE INQUIRY

Parts	Purpose	Procedures	Materials
I—Introduction and Exercise about Three Neighborhoods in New Orleans—65 minutes	Introduce the participants to the discrepant data procedure through participation in an exercise.	Participants study three residential neighborhoods and try to account for observed socio-economic differences.	3 stereograms 2 topographic maps Census tract data 22 slides of neighborhoods
II—Clarification of Discrepant Data Teaching Procedure—35 minutes	Familiarize participants with the elements of the discrepant data procedure.	Through class discussion the instructor clarifies the discrepant data procedure.	1 transparency
III—Analysis of an Exercise about the Cultural Characteristics of Cities—50 minutes	Reinforce the participants' understanding of the discrepant data teaching procedure.	Participants view slides of cities around the world in an exercise which uses the discrepant data approach. Participants work in small groups to analyze the exercise.	15 slides of various cities
IV—Analysis of the Video Tape—50 minutes	Clarification of the advantages and disadvantages of using media to encourage inquiry.	Participants observe class doing Three Neighborhoods exercise. Discussion focuses on classroom organization and characteristics of teaching.	Video tape
V—Application—50 minutes	Give participants experience in using the discrepant data procedure.	Participants may teach an activity having the discrepant data teaching procedure.	12 slides of Japan and North America

Questionnaires containing questions on beliefs and attitudes about social studies were administered to instructors and teachers alike in all of the groups at the start of the experiment. Similar questionnaires were administered after completion of the experiment, although at this time the instructors were also asked to answer some additional questions of a subjective nature. Sixteen social studies pre-service control groups which did not use the kits were also administered the pre- and post-experiment questionnaires.

Evaluation of the questionnaires showed that instructors and participants (college students and high school teachers) were very positive about the kits. Clearly, the strongest feature of the kits was the high degree of interest they generated among the participants. One participant said, "This Project has really brought home to me the importance of student involvement rather than teacher feed-out." A similar type of comment was, "This kit was interesting and useful. It is much more creative than a lecture and more memorable as such." This atti-

Fig. 21: Overview Chart—USING EVALUATION TO IMPROVE INSTRUCTION

Parts	Purpose	Procedures	Materials
I The "Game of Farming" 75 minutes	To involve participants in a simulation game which contains many kinds of learnings.	Participants, in pairs, assume the role of a farmer in Western Kansas and try to maximize their profits during two different periods of American history.	Game materials envelopes
II The Objectives of the "Game of Farming" 45 minutes	To analyze an exercise for the objectives it teaches.	Participants compare their objectives of the game with those of the game developer and view a video tape of students involved in the game.	Video tape of the "Game of Farming" Handout Sheet: "Some Objectives or Desired Learning Outcomes for the Game of Farming"
III Evaluating the Objectives 45 minutes	To demonstrate specific evaluation techniques for measuring the attainment of the objectives of the simulation game.	Participants study an evaluation instrument, read and discuss how the various items and scales on the instrument are constructed.	"Evaluation Instrument for the Game of Farming" Handout Sheet: "Some Objectives or Desired Learning Outcomes for the Game of Farming" Reading: "Constructing and Interpreting an Evaluation Instrument"
IV Using Feedback Evaluation 45 minutes	To demonstrate how group evaluation data can be applied to improve instruction.	Participants work and discuss a programmed exercise on evaluation.	"A Programmed Exercise on Evaluation" plus Answer Sheet Handout Sheet: "Some Objectives or Desired Learning Outcomes for the Game of Farming" "Evaluation Instrument for the Game of Farming
V Application 90 minutes	To provide an opportunity to construct evaluation instruments similar to those introduced in the kit.	Participants use a list of objectives and a video tape from an activity on urban structure to construct an evaluation instrument measuring the activity's objectives.	Video tape of "Portsville" "Educational Objectives of Portsville" "New Orleans East" topographic maps "Holly Bay Community" sketch maps

tude was also expressed by instructors who said, "This has been some of the most effective material I have found to use in my methods course. I am especially impressed by its flexibility." Another comment was, "I think these kits had an unusually higher amount of participation worked into them than college students normally experience. This was an excellent feature of the kit."

Instructors and participants also agreed that the kits dealt with significant topics and that they had learned more from the kits than from other educational courses or workshops. One participant commented, "This kit represents totally new ideas, at least as far as I am concerned, about teaching social studies." An in-service participant remarked, "With effort on the teacher's part, a completely new social studies program could be developed based on the techniques we are learning. It certainly would be a terrific and positive thing for the student—and should make teaching new and exciting!" An instructor stated, "The students were highly motivated. Word spread on the campus regarding the effective methodology." About 75 per cent of the instructors queried believed that the kits were more effective than the regular materials they used. Also, 50 per cent said the kits were "much more effective." More than 90 per cent of the instructors plan to use the kits again. Finally, there was agreement that the kits should be used in social studies methods classes.

The teacher education kits were a logical outgrowth of the materials in the *Geography in an Urban Age* course. Experience from conferences and workshops had shown that many of the activities designed for high school students were also highly suitable for adults. These activities could be analyzed to isolate ideas in geography and to illustrate teaching processes. This is not to say that many instructors have not been doing things very similar to what is included in the teacher education kits. The kits, however, represent a particular combination of specific analytic and application activities that appear to have been very effective. Their success can be attributed to the following factors: They are self-contained and complete; they are adaptable to pre-service and in-service courses, conferences, and institutes; they can be used by instructors who have little or no knowledge of geography or the topics being treated in the kits; and they provide a high degree of active participation which exemplifies the newer approaches to geographic and social studies education.

In conclusion, the teacher education program of the project altered its nature and form as the course began to take shape. An emphasis on transmission of information relating to the content of geography gave way to preoccupation with the most effective ways of helping learners become involved with geography. This resulted in the creation of a format for conferences which drew heavily on use of project materials. The teacher education kits were an outgrowth of both the conferences and the course materials. They may prove to have been a unique contribution to in-service and pre-service teacher education.

Dissemination of Information

From its inception, the project had a responsibility to communicate with professional geographers and with high school teachers. In addition, there was communication with funding agencies and the general public. Not until 1967, however, did the project have a full-time public relations officer on the staff. Up to that time, the various functions such as answering letters, preparing the *Newsletter* and arranging for presentations had been divided among members of the staff. However, in 1967 the staff was greatly expanded to expedite the editing of the course materials. Further, the availability of course materials and the increasing demand for information about HSGP made a full-time position necessary.

This emphasis on increased dissemination activity was slowed by the cutback of the budget during the 1968-1969 year when primary effort was put into completion of the course materials. The 1969-1970 year was largely devoted to dissemination of information and the production of teacher education materials.

The Newsletter

The first public information about the project appeared in a news release of June, 1961, issued by the Public Relations Office of the University of Chicago, which announced the $55,000 grant from the Fund for the Advancement of Education The first official announcement to the profession appeared in an article by Gilbert White in the November, 1961, issue of the *Journal of Geography*. In January of 1962, the first *Newsletter* appeared. This represented the beginning of a regular information service.

The *Newsletter* has been the one continuous public source of information about the project. From issue number 1 to issue number 19 (the final *Newsletter* of September, 1970) the circulation has risen from 500 to 20,000. This reflects an ever-increasing interest in the project since names were added to the mailing list only by request. By 1968 the total circulation of the *Newsletter* was at least twice that of the combined memberships of the Association of American Geographers and the National Council for Geographic Education.

The content of the *Newsletter* changed with the maturation of the project. The early issues contained highly specific information concerning present and proposed project activities, and provided names and addresses of those officially involved with materials development. Until 1966, approximately one-third of the *Newsletter* was devoted to information on geographic education that was not specific to HSGP. From 1966, however, with the increasing development of course materials, most issues were exclusively devoted to specific information about the materials and associated project business.

Letters of Inquiry

During the life of HSGP, thousands of letters of inquiry and orders for materials were received. During the school year of 1967-68, for example, letters were received at the rate of 6 to 10 per day. The kinds of letters could be categorized as requests for general information, requests for specific information, and orders for project materials.

As the project developed, the disposal of letters of inquiry became more standardized. Until 1966, every letter which came to the project was given personal attention and received a reply from a staff member. In 1967 the information editor instituted a series of form letters which could be used to respond to the most usual types of requests. From that time, approximately 50 per cent of the replies from the office were by means of form letters. Since these letters as a matter of HSGP policy always offered to provide further information or help, they often generated more specific types of requests, which were then handled by staff members.

News Releases

One of the means of disseminating information about the High School Geography Project has been the use of news releases. Prior to 1967, news releases were issued on an irregular basis. After that time, a regular and planned program of news releases was initiated. In most cases, the news stories concerned HSGP trial teachers. In this way, the local school and teachers were given publicity while the newspaper could treat the story from a local angle. Stories about the project were carried in large metropolitan dailies such as the *Minneapolis Star*,

Cincinnati Post and Times Star, Philadelphia Inquirer, and *The New York Times,* as well as in small dailies and weeklies.

HSGP Film

Another attempt to reach a large audience has been through the film, "*High School Geography: New Insights.*" The film was designed to show teachers and others how some HSGP inquiry-oriented activities work in the classroom. An evaluation by teachers, principals, teacher supervisors, and curriculum specialists indicates that most viewers have had an unqualified positive reaction toward the film. The University of Colorado Department of Audio Visual Instruction distributed three copies of the film for the project during the 1969-1970 school year. A copy of the film may now be purchased from The Macmillan Company.

Video Tape Sequences

The apparent success of the film encouraged HSGP to develop some video tape sequences in cooperation with the Associated Colleges of the Midwest Video Tape Project, headquartered at Carleton College. Prior to 1970, some 16 hours of unedited video tape was available, showing actual teaching of the *Manufacturing and Agriculture* unit. In 1970, the teacher education staff edited five additional one-hour tapes, mostly from the *Geography of Cities* unit. The editing was designed to illustrate the advantages and problems of using HSGP materials. Each tape has an Instructor's Guide giving suggestions for use and class assignments for participating students or teachers. These tapes continue to be available from the Midwest Video Tape Project.

Distribution of Curriculum Materials and other HSGP Publications

Another means of dissemination has been the actual unit materials produced by the project. School trials were a means of introducing many teachers to the project. Further, after materials became available in 1966, extra copies of units prepared for classroom tryout were made available at cost from the project's revolving fund. Materials from the project office were sold to persons in all 50 states and in over 20 countries. In the 1968-1969 school year, a total of 1,900 Teacher's Guides for the *Geography of Cities, Manufacturing and Agriculture,* and *Cultural Geography* units were sold.

Announcements of the availability of materials were carried in the *Newsletter,* the *Journal of Geography,* and *Social Education.* But there also seems to have been a ripple effect from the materials. Once a school or an area had procured samples, more and more people came in contact with them and many of them in turn purchased copies.

The Demonstration Kit was developed in 1967 as an inexpensive but fairly representative overview of HSGP materials and teaching methods. The kit contained a brochure and activities from four different units. Some 5,000 copies of the kits were published and distributed to school administrators, teachers, and college instructors within a period of 10 months.

Other kinds of information which have been provided by the project include *The Advisory Paper* of 1962 and *The Response Paper* of 1963. The National Council for Geographic Education published *Selected Classroom Experiences: High School Geography Project* in 1964. Brochures outlining the project's history, materials, and publication plans were published by HSGP in 1966, 1967, and 1969. A significant factor to note in relation to the dissemination program is that the publications of

1962 and 1963 were bound and produced in a book format, whereas all informational materials since then have been either three or four pages or produced in a kit form. When research has been done on the project, the earlier materials are more available than more recent *Newsletters* or brochures. Consequently, some authors of articles or reviews have drawn heavily on the experiences of the formative years of the project and appear to be unaware of some of the more recent developments.

Presentations

A major way of expanding the base of people who have some knowledge of the project and its materials has been HSGP participation in meetings of geographic and educational organizations. During its existence, representatives of the project made presentations to the following kinds of groups: national and divisional meetings of the AAG, national and state meetings of the NCGE, state social studies organizations, state department of education seminars in geography or social studies, in-service geography or social studies teacher workshops, geography or educational departmental seminars at universities, Association for Supervision and Curriculum Development national and regional meetings, National Council for Social Studies national meetings, and national and regional meetings in Canada.

The original priorities in accepting invitations to give presentations were based on the size and national representativeness of the audience. Consequently, invitations were accepted to national meetings, followed by regional meetings, and finally local gatherings. In time, the order changed as it was seen that presentations at regional meetings attracted larger audiences than at national meetings. This occurred for the following reasons: time was limited at national meetings, the audience was usually small because of competing presentations, or most of those who attended were familiar with the project. Conversely, at regional meetings there was usually more time provided with fewer competing presentations, and a large proportion of the audience were unfamiliar with HSGP materials.

As the actual materials for the course became available, the kind of presentation which was made about HSGP tended to change. Whereas in the initial phases the presentations were largely of a didactic nature aimed at describing the nature of geography and how this would be exemplified in the High School Geography Project, the presentations more and more began to involve the audience. This is especially noticeable by 1967 when the "Site Diagrams," "New Orleans," and "Game of Farming" activities were available. With the development of the *Cultural Geography* unit, the short activities based on slides entitled "Different Ideas about Cattle" and "Culture Change: A Trend toward Uniformity" became available and were found to be especially useful in presentations to adults which were approximately one hour or less. This movement from "telling about" to "involving with" is thus a theme that is reflected in the method of making presentations as well as in the development of the materials.

One measure of the effectiveness of the dissemination of information about the project may be seen from the results of a questionnaire which was sent to members of the AAG and NCGE in the spring of 1970. From this it was determined that over 90 per cent of the AAG and 85 per cent of the NCGE respondents had knowledge of the High School Geography Project.

Summary

The dissemination programs of the High School Geography Project evolved and changed in relation to

the development of the *Geography in an Urban Age* course. The dissemination activities became more effective and self-perpetuating as activities and units were developed, tested, and made available for sale. The course materials were considered to be one of the most effective ways of spreading information about the project, while the *Newsletter* appeared to be the most effective means of continuing contact with interested people. The funding agencies had some effect on the dissemination program, as they were concerned about activities that could be construed as improper promotion with the use of public funds. Consequently, the dissemination efforts of the project concentrated in particular on the *Newsletter*, invited presentations, conferences, correspondence, and articles in professional journals.

The adoption of new educational materials requires changes in values, attitudes, and skills. Naturally, there is caution and resistance to these changes. The High School Geography Project, through teacher education and dissemination efforts, has pioneered in developing ways of helping teachers to adopt different and sometimes seemingly threatening approaches to teaching. The High School Geography Project therefore would appear to have made a small but significant initial impact on geography teaching and social studies education.

(1) An example of such an exercise is discussed in J. William Pfeiffer and John E. Jones, *A Handbook of Structured Experiences for Human Relations Training*, (Iowa City, University Associates Press, 1967)

Chapter 6

The Producers: A Social History

William D. Pattison

The design for classroom learning known as *Geography in an Urban Age* represents the work of hundreds of people who contributed their services over a period of nearly ten years. A review of those years—the life of the High School Geography Project—suggests a division into (1) a confidence building phase, (2) a researcher's initiative phase, and (3) a staff control phase, in each of which a distinctive set of social relations prevailed. The present chapter offers an interpretation of project activity in all three phases, with special reference to values held by individuals and groups concerned.

There can be no adequate understanding of the social history of HSGP without full recognition that the project began as part of a general reform movement, and that it probably would not have been able to maintain its sense of mission and productive capability during the long interval between the beginning and the completion of its work without unusually strong leadership. As background for a discussion of the project's three phases, the characteristics of the pace-setting movement and the stresses necessitating highly purposeful guidance will be described.

The Movement

By the end of the 1950's, a sufficient number of curriculum reform projects, principally sponsored by the National Science Foundation, had been organized to comprise a powerful new force in American education. The typical project was national in nature, not only by virtue of its financial support, but also because it drew on a nation-wide community of talent, was sanctioned by some appropriate national learned society, and was neither approved by nor affiliated with those state and local agencies that have jurisdiction over the school curriculum. Leading examples were the School Mathematics Study Group (SMSG), the Physical Sciences Study Committee (PSSC), the Biological Sciences Curriculum Study (BSCS), and the Chemical Bond Approach Project (CBA).

The dominant attribute of the projects, taken together, was that they were discipline centered rather than child or society centered. That is, their emphasis was on updating and reorganizing those academic disciplines that were considered basic in the pre-collegiate curriculum. The movement that they expressed was a reaction against curricular excesses of the 1930's and 40's. At the same time, it was a response to the problems created by vast accumulations of knowledge and new ways of structuring it. An overriding aim was to identify those concepts, principles and methods of investigation that were believed to be most worth teaching.

Out of an early conference of project leaders and invited specialists came *The Process of Education* by

Jerome Bruner, which stated the tenets of the new curriculum makers more persuasively than any other publication. This book—in effect a campaign document—soon engendered the conviction that "the best minds in any particular discipline must be put to work on the task [of developing curricula for the elementary and secondary schools]." Bruner popularized the proposition in this volume that a program for instruction should "reflect the basic structure of a field of knowledge." He set forth the hypothesis that "any subject can be taught effectively in some intellectually honest form to any child at any stage of development." And he brought into prominence the image of the student as an active inquirer who should be provided with materials permitting him to discover for himself underlying regularities of relationship. (1)

Not all parts of the curriculum reform movement were given over to student inquiry. Many of the early contributions, especially those made outside the major projects cited above, were emphatically didactic in style, and some consisted entirely of lecture-demonstration performances by experts, recorded on film or video tape for replay in the school classroom. Two examples were a high school physics course presented by Harvey White of the University of California, in 1956-57, and a high school chemistry course presented by John Baxter of the University of Florida, in 1958-59, both produced on film and both financed by the Fund for the Advancement of Education.

The Fund for the Advancement of Education, a specialized branch of the Ford Foundation, first made it possible for geography to participate in the reform movement. In April, 1961, after more than a year of exploratory dialogue, the Fund authorized a group of representatives of geography to proceed with plans for developing "a new program in the teaching of geography for the high schools of the nation." (2) In making a modest initial grant, the Fund signified its acceptance of a proposal calling for "a course which could be produced . . . on film and television." "Rather than do away with the teacher," the proposal said, "the object [of the opening stages of the project] would be to suggest fruitful ways of assisting the teacher through tape and associated study guides, map and globe materials and other laboratory materials." Here we find the earliest specification for what was to become the HSGP design for learning.

Records of the extended preparatory dialogue between the Fund and the geography group make it apparent that the Fund was most interested in the prospect that "basic ideas and skills" would be identified. In concentrating on this expectation and in placing primary reliance upon persons from geography rather than upon persons from professional education, the Fund was acting as a transmitter of the values of the reform movement. Alvin C. Eurich, speaking for the Fund as its vice-president, legitimated the role of the academic geographer as judge of the validity of the ideas and skills in question. But—a point of great significance for the future of the project—he entertained a decidedly free interpretation of what the expression "discipline centered" might mean. His endorsement of the project implied no more than an acknowledgment of a need, to quote from the proposal, "for disciplined training in looking at our complex world from a geographic point of view."

The Guidance Imperative

On the other side of the dialogue was one of the cochairmen of the geography group, a joint committee representing two long-established geographic societies. Negotiating through this man, who was the principal formulator of the proposal, the group assumed a responsibility whose dimensions can only now be adequately judged. They agreed to attempt the production of learning materials that would truly reflect the geographic point of view and at the same time communicate suc-

cessfully in the classroom. The problems inherent in this seemingly simple assignment were—as later sections will make clear—so formidable in themselves that they were certain to require the leadership of a practically despair-proof individual. No less challenging, in the long run, were problems external to the assignment, generated in the social milieu by the initiation and maintenance of the High School Geography Project as a self-directed, task-defined organization. The project probably could not have survived these conflicts without the benefit of determined helmsmanship by a suitably qualified individual.

From the beginning, HSGP was perceived as a threat, even by members of the group that had brought it into existence. The Joint Committee, representing the Association of American Geographers (AAG) and the National Council for Geographic Education (NCGE), was made up of eight persons, all but one of whom had a direct interest in at least one textbook, then either on the market or under development. For them, of necessity, a question of constant concern was whether or not HSGP would grow along lines at variance with the curricular commitments that they had already made.

Beyond this personal uncertainty was a troubling organizational question: What does the founding of HSGP imply, relative to the functioning of the National Council for Geographic Education? Considering the fact that the NCGE had been set up many years earlier as a society charged with taking initiative in all matters pertaining to geography in education, the answer was painfully evident. Creation of HSGP as an organization that was expected to define teachable ideas and skills implied that the NCGE, though perhaps once successful, now required help in achieving its declared aims. Both inside and outside the committee, on account of this implication, uneasiness was felt about the new venture.

At least, however, the NCGE was a sponsor of the project, and hence the "old guard" of geographic education were able to take part in its proceedings. The same could not be said of professional education proper, whose geography-interested membership was concentrated in the National Council for the Social Studies (NCSS). The leaders of this society had reason to look upon the project with a degree of doubt, not only because they were not officially involved in its organization, but also because early published declarations of intent gave them little reason to expect that the promised learning materials would reflect the values for which they stood. From their point of view, the teaching of geography in elementary and secondary schools was justifiable only if it were shaped primarily to serve the purposes of social training: acceptable geography was required, in their eyes, to contribute directly to an understanding of public issues or otherwise to lead to better citizenship. One can imagine readily enough the reaction of persons oriented to the outlook of NCSS when they read that the project would be basing itself upon "such new concepts as those which have emerged from modern geophysics and central place theory."

What, then, of the AAG? Perhaps, on balance, the AAG had more cause to be hopeful than apprehensive, as the future development of the project came under contemplation. This was the society that won the right, at the outset, to serve as fiscal agent for the project, thereby gaining in prestige and in magnitude of central office operations. Further, this was the society that could claim to represent the scholars and scientists in geography to whom the project was now turning for consultation. On the face of it, the High School Geography Project was a precedent-breaking opportunity for the AAG to enlarge its influence. Beneath the surface, however, HSGP presented unsettling characteristics.

The AAG was largely made up of geographers engaged directly or indirectly in undergraduate instruction, the level of education at which geography was (and is, today) most widely pursued as a distinct field of

knowledge. HSGP had hardly been launched when a leading spokesman announced his conviction, in a public meeting, that if geography were properly and widely enough taught in the high schools of the nation—an eventuality that he obviously expected HSGP to hasten —all of the current introductory college textbooks could be discarded, and most introductory college courses would be obliged to undergo sweeping revision! (3) With the circulation of this opinion and of similar views expressed by other HSGP advocates, the project rather quickly gained a reputation among many AAG members as a strategy for subversion, and the AAG as a corporate body was given occasion for some second thoughts about the reform that it was sponsoring.

In brief, HSGP induced tensions in its environment. Without looking into the experience of projects in other fields for comparison, one can say that the disturbance caused by HSGP was sufficiently great to require the guidance, in due course, of a top-level leader of fixed purpose. Not without irony, the man who would be stepping into this role was the same as the person who had raised tensions sharply at the beginning of the project's history by his announcement of the intended effects of HSGP on college instruction. He was Gilbert White, former president of Haverford College and, at that time, a professor of geography at the University of Chicago. White, who would later also be taking ultimate responsibility for maintaining forward motion in the project's production process, must be thought of as a major social factor in his own right as one reads the sections that follow.

Becoming Believable: The Confidence Building Phase

For two years following the opening date of its operations, September 1, 1961, HSGP followed through on three steps in the proposal (drafted by White) under which it had been funded:

> Step 1. Definition of Basic Ideas and Skills
>
> As a first step the AAG-NCGE Committee on Education would appoint a working group, including high school as well as university teachers and research men. The co-chairmen of the Joint Committee would serve as ex-officio members. The group would define the basic ideas and skills which it is believed could be taught at the high school level. This would not take the form of a course design, but it would indicate a series of items which might well be incorporated into a course, and would suggest ways in which they might be taught effectively.
>
> To accomplish this aim would require two intensive working sessions of about one week's duration with a period of several months in between to revise and specify ideas. Out of the second working session would come a draft statement.
>
> Step 2. Review of the Draft Statement
>
> Once a draft statement had been prepared, it would be circulated to a much larger group for comment. At a conference these comments would be reviewed. The initial working group would be enlarged for this purpose and it would be expected that it would include a geographer who would have been selected as a suitable person to carry the major burden of organization and instruction in the event that the effort reaches the production stage. The emphasis would still be on major ideas and promising methods and not on an agreed curriculum: we do not want to water down new and challenging ideas by seeking committee agreement.
>
> Step 3. Experimental Stage
>
> Anticipating the results of the review conference, we would hope to have arranged with several school systems to undertake during some part of the school year 1962-63 to experiment with the ideas and methods which emerge from that conference. . . . In each case, we would arrange for collaboration between the cooperating schools and a nearby cooperating university. At this point, the geographer who would be carrying the burden of responsibility would be on the job.

As pledged in the proposal, members of a work group were assembled, and a draft statement based upon

their discussions was written. A review conference was held. Finally, teachers in selected schools, each associated with a geographer in a nearby university, developed units of study during a year of trial teaching. All of this activity was coordinated by a director, William Pattison, the author of the present chapter.

Meantime, a process of persuasion was under way. By successfully going through these three steps, HSGP was undertaking, in effect, to win the confidence of significant people in the feasibility of its long-term assignment. It was attempting to direct attention to the question of research-based disciplinary structure, as applied to geography, and to increase interest in, if not faith in, the viability of geographical ideas in the student culture of the American high school. The principal targets of persuasion were (1) academic geographers, and (2) the National Science Foundation.

Although research, the essential act of participation in a discipline, had enjoyed a place of importance in the American geographic community for more than half a century, diverse lines of inquiry had been pursued and, as a consequence, a unitary rationale continued to be elusive. During the years immediately preceding the initiation of HSGP, the overall interpretation that had won the most adherents held geography to be a field concerned with "the meaning of likenesses and differences among places." Although this position had taken on the character of an official view with the publication of *American Geography: Inventory and Prospect*, in 1954, it had not supplied an articulation of concepts that was fully convincing as a disciplinary structure.

In its opening phase, HSGP found itself caught up in a contest between the likenesses-and-differences position and a competing interpretation that equated geography with locational analysis. Holders of the latter view, convinced that they represented scientific geography, produced a highly ordered scheme of concepts that the project placed on the public record: a tightly defined link-up of "geographical fact," "spatial distribution," "areal association," "spatial interaction," and "region." Dissemination of this system which was expressed most succinctly in preliminary material developed by Edwin Thomas (4) may not have gained great numbers of converts within the profession, but it unquestionably stimulated other factions to reflect upon their own research preferences, from a "structure of the discipline" point of view.

And the question of viability in the high school? In the beginning, practically the only professional geographers interested in this issue were those who had taken a hand in textbook writing for the high schools. Those serving on the Joint Committee felt the need for greater reliance upon the thinking of contemporary research geography. By the end of the project's second year, more than eighty geographers had been drawn to some extent into an involvement with high school instruction under conditions that challenged them to reflect upon the possible relevance of substantive, geographic research to high school learning.

Most of the geographers served as critics, consultants, and general advisors. Thirty of them, however, functioned as paired associates with high school teachers, and of these, ten were designated for close collaboration. While it seems safe to say that practically all of these professionals were affected by their experiences, those most exposed to change were the ten close collaborators, and of their number none responded with a more dramatic re-direction of attention than Robert McNee, then of New York City College. His teacher associate, Herbert Friedman—who taught McNee while learning from him—was then on the staff of a New York junior high school. The content of their conferences foreshadowed, in principle, the outline later presented by McNee as the first draft of *Geography in an Urban Age*.

The National Science Foundation became apprised of HSGP's progress during Step 1. Borrowing confidence, perhaps, from a decision by the Fund for the Advancement of Education to carry the project for a second year, the Foundation took a visible interest when Step 2 was made. It sent a representative to the project's debut in the official world of education, the general review conference held in May, 1962. By September, the HSGP *Advisory Paper*, basic document for Step 3, had come to hand for study. In the following February, the Foundation received a proposal for support. When discussions were held in August, 1963, at the end of Step 3, a Foundation representative attended, obtaining for review the HSGP *Response Paper*, in which teacher reactions were presented. Conversations between representatives of the Foundation and the project followed; then came a revision of the proposal (drafted by White), and at last, in April, 1964, approval of funding. A turning point in the history of the project had been reached.

Enter Unit Authors: The Researcher's Initiative Phase

The turning point came when key roles were redefined in the approved proposal. First, policy making was assigned to the project's own governing board. This body, organized as the HSGP Steering Committee under the chairmanship of White, was to consist of "eleven outstanding research scholars . . . appointed for the duration of the project." Continued existence of the Joint Committee representing the AAG and NCGE was assumed; indeed, payment for meetings of that group "to review the progress of the High School Geography Project" was included in the new budget; but authority had passed to the project itself.

This shift, while enhancing the project's capacity for positive action, greatly increased tensions in the social environment. The adherents of traditional geographic education tended to see the move as a demonstration of power politics, finding it difficult to accept the fact that the theory of NSF-sponsored reform required leadership to be consigned to substantive researchers. Academicians —at least, those who agreed with the project's aims— may have welcomed the change, but there was probably serious misgiving about it among leaders of the AAG (the society that necessarily became, under NSF funding regulations, fiscal agent). It is certain that in later years, even after Steering Committee membership had been limited to a fixed term and various project activities had been opened to review, some officers of the AAG were inclined to feel that the project was not sufficiently accountable, especially in fiscal matters, to the organization's central office and executive board.

Second, responsibility for the content of the learning materials was redistributed. The initial understanding of a proper assignment of this responsibility had been contained in the agreement with the Fund for the Advancement of Education. Under Step 2, reference had been made to "a suitable person to carry the major burden of organization and instruction in the event that the effort reaches the production stage," and under Step 3, to "the geographer who would be carrying the responsibility. . . ." Actually, this geographer was not officially identified during the conferences of Steps 2 and 3, but in the original proposal to the National Science Foundation submitted early in 1963, a geographer experienced in geographic education appeared as project director. Had this proposal been approved, he would have headed a large centralized production organization charged with developing sixteen instructional units, together with special student materials and tests, within a period of two years.

Through the role of general content manager, the project director would have come into his own, so to speak, after having been limited to the functions of co-

ordination and report writing during Steps 1-3. The director named in the proposal would almost certainly have maintained continuity with the trial teaching of Step 3 by drawing on materials partially developed then and by incorporating some of the teachers of that phase into the new production staff. It seems likely that he would have kept in force the ruling prospect of a filmed course. To quote from the proposal, "In the final stage of the project, a number of these units will be selected and taught as a 'demonstration' course. This course will be taped or filmed for classroom or for television and distributed by commercial firms."

The National Science Foundation—or more accurately, its Course Content Improvement Section—declined to approve the proposal without modifications that left the original plan for production barely recognizable. Apparently prompted by its earlier experience with the curriculum reform movement, NSF adopted a gradualist approach, assenting to a rewritten prospectus that read, in part:

> The Steering Committee early should select two units for tentative courses, preferably from different types of courses, push these to completion and thereby learn how to estimate and organize for the larger job ahead.

By this sentence, the role of general content manager was set aside, since the power of unit selection was given to the Steering Committee and the immediate demand for broad integration of content was removed. Who was to originate the units? The answer was provided a few sentences further on:

> As a minimum, each unit would require one scientist to take the principal responsibility, with support of research, cartographic, visual aids, and writing assistants, and with consulting help of a competent psychologist, to advise on evaluation methods.

Enter the geographer as specialized unit author. The project was agreeing, in these words, to the inauguration of a role, that of the research geographer as quasi-independent producer, heading his own work team.

By the time HSGP formally resumed operations, September 1, 1964, a division of responsibility for content had become well defined. The Steering Committee, having met from time to time since late 1963, when favorable action by NSF had begun to seem probable, had constituted itself not only as a board of governors but also as an assembly of philosophers, and in the latter capacity had taken upon itself the obligation to produce course designs. Prospective unit authors had come to be seen as contributors whose services were required to make any particular course design live. A few months prior to the date of resumption, Nicholas Helburn, geographer from Montana State University, had been invited to join HSGP as its new director to expedite production at both levels.

When the Steering Committee convened in December, 1964, for probably the most important session it ever held, the wisdom of the caution shown by NSF became evident. The pluralism of geography insistently asserted itself as six course outlines, each expressing a fairly distinct philosophy, were presented and justified, and as a diversity of opinion was advanced concerning the kinds of input to be hoped for from unit authors. (5) NSF policy had prevented closure at too early a date on working assumptions about the ways and means of course development. But a price was paid. The options that had been opened to the new committee resulted in a significant reduction in carry-over from earlier project activities. Still, the amount of loss was probably not as great as many observers have supposed. A channel of communication was kept open by the presence on the Steering Committee of three former Joint Committee members, the former project director, and a geographer who had been one of the most active sponsors of classroom experimentation during the project's second year.

The one-time sponsor was Robert McNee, recently arrived at the University of Cincinnati. McNee presented to this session of the Steering Committee a course outline

that sufficiently accommodated the conflicting points of view in the meeting room to permit its adoption as "the outline for next year." The Steering Committee chairman evolved a plan, by about midway in the meeting, for the completion of fourteen units by the end of the following year, (September 1, 1966) nine of which could be assigned to the McNee course, and the remaining five of which could be distributed among the alternative outlines. What neither he nor others could foresee was that no more than the nine units allocated to the McNee framework would ever be developed, that these nine would later be reworked into the six units of the final project course, and that the McNee outline itself would eventually become a casualty of the developmental process, after having served for several years as an indispensible vehicle for communication between the Steering Committee and unit authors.

Armed with the McNee design—which soon became known through project publicity as the settlement theme outline—and with NSF approval of a proposal for additional unit development, Nicholas Helburn went into the geographic community as an evangelist, to urge his belief that no more exciting and worthwhile challenge could be offered to a geographer than an opportunity to become a unit author on contract with the High School Geography Project. Converts were made from coast to coast. The final roster of contract signers (April, 1966) read as follows:

Subject of Unit	Geographer	Home Institution
Urban Geography: Intracity Analysis	Arthur Getis	Rutgers-The State University, New Brunswick, New Jersey
Urban Geography: Intercity Analysis	Edward J. Taaffe, Leslie J. King	Ohio State University Coulmbus, Ohio
Manufacturing	Howard A. Stafford	University of Cincinnati Cincinnati, Ohio
Agriculture	Duane Knos with Department of Geography	University of Kansas Lawrence, Kansas
Culture Change	Max C. Kirkeberg, Richard F. Hough	San Francisco State College, San Francisco, California
The Habitat	Melvin G. Marcus	University of Michigan Ann Arbor, Michigan
Fresh Water Resources	Douglas B. Carter	Southern Illinois University, Carbondale, Illinois

Political Geography	Roger E. Kasperson with staff at Clark University	University of Connecticut Storrs, Connecticut
Japan	Elmer A. Keen	University of Victoria Victoria, British Columbia

Taken as a whole, this was a group strongly oriented to the values of research geography, and it was a group whose median age was well below that of the Steering Committee.

McNee, after talking with all of the unit authors and studying their output in its preliminary state, concluded that "every phase of the settlement theme course is being viewed as a diffusion challenge, as a challenge to develop new and ingenious means to put ideas across." (6) With the advent of this drive toward innovation in technique, the heritage of didacticism that extended back to the beginning of the project began to wane. Even before the recruitment of authors had been completed, one no longer heard in Steering Committee meetings about a closing stage in which a demonstration course would be produced, featuring a lecturer-demonstrator. The author who led the way in this transformation of attitude was one of the first two to accept the project's invitation, Arthur Getis, a specialist in the geography of cities.

What Getis contributed was a conception of his part of the course *as a sequence of learning activities.* More to the point, he contributed an application of the conception, in the form of student readings and teacher guidelines. The idea itself was not new among educators; it had appeared already within the project itself, in materials produced by classroom teachers; it had even been singled out for attention by the program's first director (7) but now, for the first time, it took hold. Getis, who did not see his product in terms of student activities until work on his unit had been under way for several months, apparently came to the view through the combined influence of his wife, who was an experienced teacher, and of Dana Kurfman, chairman of the Social Studies Department, Educational Testing Service (ETS). When Getis made the interpretation his own, a breakthrough occurred; a research geographer, chosen as a representative of his field of specialization, had satisfied himself that essential values of the discipline, as he understood them, were not sacrificed when geographic education was so conceived.

Once this assimilation had taken place, Getis and his team were able to complete their job in a relatively short time. Getis and his wife, as principal collaborators, turned in their written results in September, 1965. Geographers from Rutgers and elsewhere had contributed working suggestions, which had then been developed as activities; five teachers from the vicinity of Rutgers had conducted informal school trials; and, not least important, professional evaluation procedures had been brought to bear upon the entire production process by ETS, setting a precedent for later teams.

In the national pattern of work that soon emerged, Nicholas Helburn functioned as informant and exhorter. By letters, calls, and conversations, he promoted a project-wide sense of adventure, passing along the lessons of experience from author to author—especially, at first, lessons from the Getis's—and sharing with them the benefit of what he was learning from other projects.

Through Helburn, the unit authors became aware of the norms of the curriculum reform movement. He preached "the courage to exclude" as a virtue to be cultivated by makers of new materials, and he kept before the authors the "discovery" principle as a methodological ideal. Helburn maintained regular contacts with the Earth Science Curriculum Project, and he opened interchanges with, among other undertakings, the Anthropology Curriculum Study Project, and Sociological Resources for Secondary Schools.

As communications improved both within HSGP and between other projects and HSGP, the unit authors tended toward standardization in many of their procedures, as would be expected. However, their progress gave rise to serious production problems, the reason being that they were strongly role-oriented in their perception of HSGP's demands. Each tended to see his unit as the expression of himself in the role of geographer-turned-curriculum-reformer, as demonstrated in contemporary published accounts by Stafford and Kasperson, authors of the original manufacturing and political units. Stafford indicated his belief that the ultimate organizing principles for his unit were to be found in the answers he gave to his psychologist-collaborator when asked, "What do you want them to learn?" and "How does the activity relate to your learning goals?" (8) Kasperson, writing as a reformer addressing others of his kind, declared, "From the outset, the innovator must face up to the questions: 'Where do I get my ideas?' 'How do I work best?' " He saw teachers, fellow geographers, educational consultants, and the Educational Testing Service as sources upon which he, as creative strategist, was to draw. (9)

Given the opportunity to produce as individuals—in consultation with others—the unit authors amply rewarded the project with highly original and worthwhile contributions, but upon completion of their work they left behind two formidable challenges: (1) the problem of at least approximating the course unity that had once been provided by the McNee outline, and (2) the problem of realizing the potential for student involvement that they themselves had implanted in the units. Available evidence suggests that the Steering Committee, in requesting support from NSF for an extension of the project's life beyond August, 1967 was far more cognizant of the first than of the second challenge. In any event the meeting of both challenges required that responsibility be assigned to a resident project staff. The Steering Committee had been authorizing staff increases for some time, partly in anticipation of an extended production period. By the spring of 1967, having reached a strength of nearly twenty persons, the staff was prepared to assume primary control.

Following Through: The Staff Control Phase

The attention of the Steering Committee had largely been diverted by the spring of 1967 to matters peripheral to both of the challenges posed by the unit authors. The most important committee business, in the opinion of many of the members, had come to be the granting of "equal time" to the likenesses-and-differences school of geographic thought by producing a second HSGP course. Accordingly, the extension request to NSF called for development of a pilot unit for a course in regional geography, a course that would focus on one area of the earth at a time. Approval of the course was later rescinded, but by then large amounts of Steering Committee time had been devoted to its consideration. Committee time was also claimed, from about mid-1966 onward, by questions attaching to an introductory unit and a closing unit, which were to transcend the content of the nine units of the course proper; by the possibility of an interdisciplinary course at an advanced level; by the desirability of materials for "bright underachievers"

(see Chapter 3); and by issues of dissemination, teacher education, and the securing of a publisher.

While members of the project staff were concerned, as workers, in all of these elaborations of project purpose, abortive and otherwise, the central responsibility that they assumed was that of converting the unit authors' materials from the condition in which they were received, at the termination of each contract, to the state in which they would finally be submitted for publication. The first of the two problems of conversion—the challenge of course composition—was seen rather early to have both a literary and a disciplinary dimension. At first, in the hope that the two dimensions could be dealt with separately, the director retained a general editor who had been active in translating technical papers into popular language. He was asked to help five or so of the authors to bring their units "into a relatively uniform style and format." The venture failed and the editor departed, leaving behind a doubt that such editorial adjustment could be successful without surveillance by someone qualified in the discipline.

Early in 1967, a member of the Steering Committee was asked to meet what had become an almost desperate editorial need. He was Donald Patton, then of the Carnegie Institution of Washington. Patton's broad experience as a geographer allowed him to apply more or less automatically the test of disciplinary validity as he marshalled materials. He served first as special editorial consultant, then as periodic editorial reviewer, and finally as managing editor, heading a group of nine persons, in which Elizabeth Johnson served as senior editor. In the last-named capacity, which he filled during the project's two fiscal years 1967-68 and 1968-69, when materials were processed under great pressure to meet final publisher's deadlines, Patton came as close as anyone in the history of HSGP to playing the part of general content manager. He coordinated inputs—often including new ideas and original writing—from a work group that embraced not only the editorial team but also the project director, graphic artists, a cartographer, and other staff members. To these inputs he added his own. When they were finished, as he explains in Chapter 2 of the present report, he felt that they had fashioned "a rather loosely structured, open-ended course." To appreciate this accomplishment, it must be realized that their raw materials expressed most of the pluralism contained in all six of the course outlines originally prepared by Steering Committee members.

Patton's work was greatly assisted by a system for activity analysis developed by Helburn, in cooperation with Anne Manheim, his administrative collaborator during the difficult time of transition from author control to staff control. This scheme, which has been described in Chapters 2 and 3, concentrated upon *cognitive skills*, and in doing so—whether or not with entirely conscious intent—it appears to have provided the staff with a common frame of reference for responding both to the challenge of course composition and to the second challenge, that of fulfilling the potential of the assembled units for student involvement.

As Donald Patton took leadership in meeting the first challenge, so Dana Kurfman did in meeting the second. Kurfman joined the HSGP staff late in 1966, but he had by then been contributing to the project for nearly two years as a representative of Educational Testing Service. As a staff member, with assistants, he continued to design and administer the evaluation element in the development-evaluation-revision cycle described in Chapter 4. At the time of his transfer to HSGP, the scale of evaluation had expanded to cover six units in the classrooms of 70 teachers in 67 schools across the United States.

Change in the direction of student responsiveness may have been stimulated to some extent by unit tests,

but the instruments that were of primary effect were the questionnaires through which the project was able to obtain detailed reactions to unit content from both teachers and students, including indications of attitude. Kurfman concluded, regarding teachers, "If you ask them if something was interesting and if it was effective, their answer is the same." He said of students, "We should be concerned about what interests them because this determines their willingness to continue." In the assumption that students must like what they do to learn what they should, can be found the principal motive behind the shift toward student values that followed relinquishment of control by the unit authors.

Reports from the classroom, feeding back into the general editorial process, eventually forced large quantities of material into retirement. Two of the original nine units—those on intercity relations and fresh water resources—were almost totally displaced, along with a "proto-unit" expounding a structure for geography from the point of view of locational analysis. Much of the distinctly academic content of the surviving units, including attempts at precise definition of the subfields of geography, was also eliminated. Gradually, the reworked materials emerged as consumer-approved resources for teacher-student and student-student transactions.

Many sources of influence on *Geography in an Urban Age*, including the views of authors from outside the United States commissioned to write materials beyond the original units, (10) must be passed over in an account as brief as the present chapter. A force that cannot be ignored is the advice on the conditions of manufacturing and marketing given by the publisher. Not long after The Macmillan Company had contracted to publish, access to the experience of that firm became available, and for much of the final year of preparation a company representative was in residence with the project. The counsel of Macmillan was responsible for the addition of one activity, "Migrants to the City," in Unit 1. Interestingly, the cultural and political units might have been merged, but for the expectation by Macmillan that many schools would be interested in one of the subjects represented, but not both.

To complete the staff's production responsibility, a special contingent under Dana Kurfman's directorship was authorized to extend the project's life into fiscal year 1969-70. This group brought the teacher education effort of HSGP to a conclusion by developing three kits —innovational in themselves—identified in Chapter 5. The significance of the kits, from the point of view of the present chapter, is that the conception of them and the drive behind their development came from within the staff. They expressed the values of staff members with school teaching experience, by whom the social studies as an instructional institution was taken for granted and to whom the teaching strategies of HSGP commended themselves as a demonstration of "the new social studies." The kits were undertaken in the belief that they would be able to show the teacher-to-be, through sample HSGP materials, how appropriate classroom activities can affect the desire to continue learning and can train in the skills required for effective learning—all within a general social studies framework. Returns from field trials, to date, suggest that the expectation has been entirely borne out.

Now, in August 1970, nearly a year has gone by since the last of the course materials were mailed to the publisher. In the meantime, while the teacher education kits were being created, the publisher has been engaged in printing and initial distribution of the units. Beginning in September, 1970, the high schools of the nation will at last have at their disposal, in a form imagined by no one at the time of its inception, a course "for disciplined training in looking at our complex world from a geographic point of view."

1. Jerome S. Bruner, *The Process of Education* (Cambridge: Harvard University Press, 1960). Quotations from pp. 19, 32, and 33.
2. Letter, Alvin C. Eurich to Gilbert F. White, April 25, 1961.
3. Gilbert F. White, "A Joint Effort to Improve High School Geography," *Journal of Geography*, Vol. 60 (November, 1961), p. 359.
4. Edwin N. Thomas, "Some Comments About a Structure of Geography with Particular Reference to Geographic Facts, Spatial Distribution, and Areal Association," in Clyde F. Kohn, ed., *Selected Classroom Experiences: High School Geography Project* (Normal, Illinois: National Council for Geographic Education, 1964), pp. 44-60. A later version of those materials appeared in: *A Structure of Geography: A Proto-Unit for Secondary Schools* (Association of American Geographers, 1965).
5. The six outlines, as later titled when drafts were submitted for an intended publication, were: (1) Settlement Theme Course, (2) World Culture Regions Course, (3) World Processes-Resources Course, (4) Political Geography Course, (5) World Problems Course, and (6) History of Geography Course.
6. Robert B. McNee, "The Education of a Geographer: 1962-1967," *Journal of Geography*, Vol. 67 (February, 1968), p. 74.
7. William D. Pattison, "Changing Attitudes and the High School Geography Project," in Clyde F. Kohn, ed., *Selected Classroom Experiences: The High School Geography Project* (Normal, Illinois: National Council for Geographic Education, 1964), pp. 34-37.
8. Leonard M. Lansky and Howard A. Stafford, "Manufacturing Unit of the High School Project," *Journal of Geography*, Vol. 66 (April, 1967), p. 175.
9. Roger E. Kasperson, "On the Process of Curriculum Reform," *Journal of Geography*, Vol. 66 (September, 1967), p. 288.
10. Contributors were Brian R. Goodey, then in the United Kingdom, who was the original author of the "London" activity in *Political Geography*, and John H. Holmes in Australia, who was the original author of "Rutile and the Beach" in *Habitat and Resources*.

Chapter 7

Next Steps

Gilbert F. White

Assessment after Five Years

The full impact of a project with such wide implications for teaching methods and curriculum development cannot be judged until at least five years have passed. Even then the task will be difficult, calling for assessment methods that now are crude at best. However, it is not too early to begin laying the groundwork for an assessment in 1976. This would require definition of the dimensions to be gauged and thereby would show the data which should be collected in 1971, if not already available, to provide a baseline for later comparisons. After the freshness of the materials has passed will enthusiasm still be high among students and faculty? To what extent will the methods and concepts be adopted and improved in other courses? How widely will the unit authors and trial teachers have influenced the activities of their colleagues in universities and schools? Steps should be taken to find answers to these and other questions. Such an effort should draw upon the combined insights of teachers, geographers and educational psychologists, and should be linked with another kind of review.

A Clearinghouse for Improvements

During the early years the course materials are used, there no doubt will be need to revise them in response to revealed difficulties in teaching or to changes in their social and scientific context or to discovery of erroneous or misleading statements. As the individual activities of a unit were being developed, they changed constantly. Although the time came when changes had to stop if a version were to be published in final form, none of the activities is perfect. Further improvements may be expected to grow out of classroom trial. It is important that a means be found to share these among interested teachers and to incorporate them in whatever revisions eventually are prepared.

A kind of clearinghouse, therefore, should be set up to which all teachers and students using the materials in classroom, in-service training or institute should be invited to send comments and suggestions. These should be sorted out by a committee representative of teachers and editors, and the results circulated in simple pamphlet form to all requesting them. Such exchange would be particularly useful in improving the suggestions in *The Local Community: A Handbook for Teachers.* The national clearinghouse might well be supported by local groups which would bring together teachers using the materials and research scholars dealing with the basic ideas.

Teacher Education Materials

The future impact of project materials will depend in considerable measure upon the way in which teacher education uses them and takes account of the distinctive methods they induce. Building upon the success of the teacher education kits during the spring of 1970, it is essential to make the tested and revised kit on *Using Simulation to Involve Students* widely available for

in-service training as well as pre-service classes and institutes. At the same time, at least three additional kits should be prepared and marketed in similar format. These would include materials on using media to stimulate inquiry and on using evaluation to improve instruction. They might well be extended to deal with such topics as the interdisciplinary aspects of social studies and of environmental alterations. Either independently or in cooperation with other curricular groups, additional materials should be put together on methods of bridging instruction in social studies with natural sciences.

Geographers should be ready to join with scholars and teachers from other disciplines in preparing additional materials which span problems of science and society. The HSGP activities and teaching strategies could contribute to new units in that direction. In turn, the course as now available would gain from more explicit linkage with related material from biological, earth and social sciences.

New Teacher Training

In the months immediately ahead, systematic efforts should be made to stimulate summer and in-service training programs for teachers who may be expected to use HSGP materials. These have been found to be productive for most of the teachers and to have encouraged greater attention to geography teaching among the departments that sponsor institutes or collaborate with city school systems in such ventures. The benefits and methods of training programs need to be more widely known among possible academic sponsors, and a means should be provided for them to exchange experience.

Toward a World View

From their experience with a national effort to help students think more accurately and comprehensively about the world around them, geographers in the United States may be able to help their colleagues in other countries in similar ventures. There already is evidence of interest in adapting both materials and teaching strategies to environmental conditions elsewhere. Teachers and scientists in other nations should be encouraged to make whatever use is appropriate of HSGP materials in dealing with their own educational system. However, a much more ambitious and difficult task confronts scientists and teachers in all countries.

The opportunity lying ahead is to help the young people of the world recognize in similar ways the processes that account for diversity and order on the earth's surface. From such common inquiry might come a more sensitive understanding of the images which the human family shares of its domain, as well as of its own capacity to live together in peace while modifying that habitat for the human good. The time is not far off when through some international channel social and natural scientists will work together to cultivate appreciation of the different images of the globe perceived by the human race, and of the reasons for its major variations from place to place. They will seek to make that inquiry a vital part of student experience, and to promote greater precision in evaluating man's capacity to alter and protect his habitat.

If undertaken properly, it would not bear the dominant imprint of any one nation or culture. It would draw from the range of scientific and humane thinking about the earth and would encompass a wide diversity in method, material, and presentation. In a much broader sense than the High School Geography Project, it would seek similar ends in the face of similar difficulties. There is no clear understanding among the world community of scholars as to geographic discipline, no fully adequate materials are in hand for teaching about the human environment, and the trained teachers for such an enter-

prise are small in number. An international effort would explore ways in which the best teaching and research competence could be joined in a common cause to stir the inquiry and vision of the student. It would attempt to identify those concepts and skills most fruitful in understanding the world as the home of man, and it would instigate and test improved methods of teaching them.

Appendix 1

People Taking Part in the High School Geography Project

UNIT AUTHORS AND CONSULTANTS OTHER THAN HSGP STAFF

Unit 1—Geography of Cities

Original drafts were done by Arthur and Judith Getis of Rutgers, The State University, Edward J. Taaffe and Leslie J. King of Ohio State University and Budd H. Hebert, Ohio State University.

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Unit 2—Manufacturing and Agriculture

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Unit 3—Cultural Geography

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Unit 4—Political Geography

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Unit 5—Habitat and Resources

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Unit 6—Japan

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Rebecca Toevs	administrative assistant	9/65 to 12/65
Marie Van Rijn	associate director	9/65 to 8/68
Dorothy Vaughn	secretary-receptionist	2/68 to 9/68
George Vuicich	mail clerk	3/68 to 8/68
Norma Wanzer	research assistant	9/66 to 11/69
William Wells	sales & inventory clerk	6/68 to 8/70
Karen Wiley		
Gareth Zellmer		

JOINT COMMITTEE ON EDUCATION OF THE ASSOCIATION OF AMERICAN GEOGRAPHERS AND NATIONAL COUNCIL FOR GEOGRAPHIC EDUCATION, 1959-1963

Clyde F. Kohn, Gilbert F. White, Chairmen; Phillip Bacon, Norman Carls, Preston E. James, Clarence W. Olmstead, Mary Viola Phillips, Samuel Van Valkenburg.

Other Participants in Review Conference, May 1962

Jack Allen, Mamie L. Anderzhon, Edward L. Biller, John R. Borchert, William H. Cartwright, Dale E. Courtney, Ruby Crowe, Arthur W. Foshay, William L. Garrison, Edwin Hammond, Paul Hanna, Chauncy D. Harris, John Fraser Hart, Stephen B. Jones, Fred Kniffen, Mark Krug, John D. Lawrence, Gordon C. Lee, Joseph O. Lovetan, John Lounsbury, Marion E. Marts, Ovid F. Parody, Clyde Patton, Ross Pearson, Herbert Peterson, Jewell Phelps, Merle C. Prunty, Jr., Arthur H. Robinson, Wade Robinson, Ole Sand, Robert H. Shreve, Edwin N. Thomas, John L. Thompson, Alvin Urquhart, Henry J. Warman, Benjamin Willis.

Staff

William D. Pattison, Director, Henry J. Warman, Field Coordinator of Experimenting and Cooperating Teachers.

PARTICIPANTS IN EXPERIMENTAL TEACHING, 1962-63

Experimenting Teachers

Herbert Friedman, Robert F. Wagner Junior High School, New York, N.Y.; Peter V. Greco, Laboratory School, University of Chicago; Jack L. Jewell, Sandy Springs High School, Atlanta, Ga.; Guy P. Livingstone, T. Aaron Levy Junior High School, Syracuse, N.Y.; P.O. Marsubian, Grant High School, Portland, Ore.; Ralph E. Miller, Hyde Park High School, Chicago, Ill.; John P. Neal, Newton High School, Newtonville, Mass.; Frederic A. Ritter, Baltimore City College, Baltimore, Md.; Bertha Boya Thompson, Talawanda High School, Oxford, Ohio; Roger F. Wilson, Hanover Junior-Senior High School, Hanover, N.H.

Cooperating Teachers

Curtis Albertson, Rincon High School, Tucson, Ariz.; Mrs. M.E. Anderson, Williamsburg Junior High School, Arlington, Va.; Albert L. Bigenho, Bethesda-Chevy Chase High School, Bethesda, Md.; James Brennan, F. Roehm Junior High School, Berea, Ohio; Felix Crepeau, Jr., North St. Paul-Maplewood Schools, N. St. Paul, Minn.; Mabel Duncan, Mary D. Bradford High School, Kenosha, Wisc.; Helen Fisher, Dana Hall School, Wellesley, Mass.; Mrs. Norma Greene, The James Hillhouse High School, New Haven, Conn.; Grace Grimmitt, West High School, Rockford, Ill.; John Iaciafano, Senior High School, Summit, N.J.; Murray N. Kunkes, George Gershwin Junior High School, Brooklyn, N.Y.; Lawrence Latour, William Cowing School, West Springfield, Mass.; Herbert J. Peterson, New Trier Township High School, Winnetka, Ill.; Margaret C. Puff, Butler Senior High School, Butler, Penn.; Mrs. E.B. Randolph, James Wood High School, Winchester, Va.; Ronald B. Rogers, Washington High School, Phoenix, Ariz.; Mary Gwen Shaw, Wilson Campus School, Mankato, Minn.; Irving J. Sloan, Scarsdale Junior High School, Scarsdale, N.Y.; John A. Sweatlock, Ramsey High School, Ramsey, N.J.; Mrs. Anne West, Kempsville Junior High School, Princess Anne, Va.

Geographer Consultants

Mamie L. Anderzhon, Edward L. Biller, John R. Borchert, Hugh Brooks, Meredith F. Burrill, Robert D. Campbell, Lucile Carlson, Martha E. Church, Mary Colby, Dale E. Courtney, Norton S. Ginsburg, Melvin E. Hecht, Preston E. James, Stephen B. Jones, John H. Kemler, Charles F. Lane, James P. Matthai, Robert B. McNee, Alexander Melamid, Arthur E. Moodie, Merle C. Prunty, Jr., Mary Jo Read, Anthony Sas, Edwin Thomas, John L. Thompson, Alvin W. Urquhart, Lillian H. Wallace, Henry J. Warman, Guido G. Weigend.

Appendix 2

Chronology

1959 Spring	Association of American Geographers and National Council on Geographic Education appoint Joint Committee on Education.
1960-1961	Joint Committee decides to concentrate on improvement of high school geography.
1961 September	HSGP begins operations under title of "Study on the Improvement of High School Geography" with a grant of $55,000 from Fund for the Advancement of Education. William D. Pattison chosen as Director.
1962 May	Conference group of original working members, the Joint Committee and additional geographers and educators review *Advisory Paper*.
1962 Summer	Twenty cooperating teachers, ten experimenting teachers and associated consultants appointed to work with concepts, understandings and skills outlined in *Advisory Paper*. Additional grant of $116,000 from the Fund for the Advancement of Education. Henry J. Warman serves as Field Coordinator.
1963 August-September	Conference of teachers, consultants and Joint Committee in Denver review *Response Paper*, analyzing reactions to the year's experiments. Steering Committee appointed by AAG to seek financing for preparation of full course.
1963 November	Final grant of $7,000 from Fund for the Advancement of Education.
1964 April	National Science Foundation makes grant of $160,140 to develop new course.
1964 June	Nicholas Helburn selected as Project Director, effective September 1, 1964, based at Bozeman, Montana. Decision made to develop an urban unit within a settlement theme.
1964 July	*Selected Classroom Experiences* reports on experiments during 1962-1963.
1964 October	Edwin Thomas invited to develop a preliminary teaching unit. Arthur Getis selected to prepare urban unit.
1964 December	Settlement theme outline selected as basis for course. Douglas Carter selected to prepare fresh water unit.
1965 May	Role of Educational Testing Service defined in evaluating each unit. George Vuicich and Richard Keppel chosen as assistant directors.
1965 September	Office moves to Boulder. NSF approves amendment of $562,117 to original grant.
1965 October	Committee headed by Richard Keppel appointed to prepare reference volume on Maps and Aerial Photographs. Roger Kasperson selected to prepare unit on political geography. Edward Taaffe and Leslie King selected to prepare unit on urban spacing and functions. Howard Stafford selected to prepare unit on manufacturing.
1966 Spring	Committee headed by Kenneth Corey appointed to prepare reference volume on Local Community. Elmer Keen selected to prepare regional unit on Japan.
1966 Summer	Melvin Marcus selected to prepare unit on habitat and natural resources. Duane Knos selected to prepare unit on agriculture. Max Kirkeberg and Richard Hough selected to prepare unit on culture.

1966 September	Dana Kurfman heads evaluation effort.
1966 October	George Davis selected as special materials program director.
	NSF approves amendment of $952,636 to original grant.
1967 January	Robert Richburg joins staff.
1967 June	Major responsibility for evaluation shifts from ETS to the Boulder staff.
	NSF approves amendment of $58,252 to original grant.
	Donald J. Patton becomes managing editor.
1967 October	NSF approves amendment of $480,661 to original grant.
1968 Summer	Angus Gunn joins staff as assistant director.
1968 October	Contract signed for publication of *Geography in an Urban Age* by The Macmillan Company.
	NSF approves amendment of $501,721 to original grant.
1969 February	Dana Kurfman appointed Director to replace Nicholas Helburn, effective September 1, 1969.
1969 October	NSF approves amendment of $286,991 to original grant.
1969 Winter	Report completed on *Maps and Aerial Photographs*.
1970 February	Publication approved for reference volume, *The Local Community: A Handbook for Teachers*.
	Three teacher education kits distributed for testing in colleges, universities and in-service training programs.
1970 August	Printing completed for *Geography in an Urban Age*.
1970 September	Project activities transferred to central office of AAG.

Appendix 3

Publications by the Project

Geography in an Urban Age (New York: Macmillan, 1970).
- Unit 1, Geography of Cities
- Unit 2, Manufacturing and Agriculture
- Unit 3, Cultural Geography
- Unit 4, Political Geography
- Unit 5, Habitat and Resources
- Unit 6, Japan

Sources of Information and Materials: Maps and Aerial Photographs, a reference book prepared by the Committee on Maps and Aerial Photographs of the HSGP, 1970.

The Local Community: A Handbook for Teachers (New York: Macmillan, 1971).

From Geographic Discipline to Inquiring Student: Final Report on The High School Geography Project, Donald J. Patton, Editor, Ronald J.B. Carswell, Nicholas Helburn, Dana G. Kurfman, William D. Pattison, Robert W. Richburg and Gilbert F. White, with the collaboration of the Steering Committee, 1970.

PROVISIONAL UNITS

Edwin N. Thomas, *A Structure of Geography: A Proto-Unit for Secondary Schools*, August, 1965.
Arthur Getis, *The Geography of Cities*, August, 1965.
Arthur Getis and Judith Getis, *Teacher's Guide to the Urban Unit*, September, 1965.
Introductory Materials and Teacher's Guide to the Introductory Materials, October, 1965.
Douglas B. Carter, *Fresh Water Resources*, November, 1965.
Nicholas Helburn and Anne Manheim, *Unit 1, Introduction*, 1966.
Arthur and Judith Getis, *Unit 2, Inside the City*, 1966.
Edward Taaffe and Leslie J. King, *Unit 3, Networks of Cities*, 1966.
Howard Stafford, *Unit 4, Manufacturing*, 1966.
Roger Kasperson, *Unit 9, Political Processes*, 1966.
George Vuicich, *Introduction*, February, 1966.
Melvin G. Marcus and Buckley Robbins, *Unit 7, Habitat*, May, 1967.
Unit 2, Growth of Cities, November, 1967.
Unit 3, Geography of Culture Change, January, 1968.
Agriculture, March, 1968.
Japan, April, 1968.
Unit 1, Geography of Cities, August, 1968.
Unit 2, Manufacturing and Agriculture, October, 1968.
Unit 3, Cultural Geography, August, 1968.

NEWSLETTERS

HSGP Newsletter, Number 1 January, 1962.
HSGP Newsletter, Number 2 October, 1962.
HSGP Newsletter, Number 3 April, 1963.
HSGP Newsletter, Number 4 June, 1964.
HSGP Newsletter, Number 5 December, 1964.
HSGP Newsletter, Number 6 April, 1965.
HSGP Newsletter, Number 7 September, 1965.
HSGP Newsletter, Number 8 January, 1966.
HSGP Newsletter, Number 9 April, 1966.
HSGP Newsletter, Number 10 November, 1966.
HSGP Newsletter, Number 11 December, 1966.
HSGP Newsletter, Number 12 March, 1967.
HSGP Newsletter, Number 13 October, 1967.
HSGP Newsletter, Number 14 January, 1968.
HSGP Newsletter, Number 15 May, 1968.
HSGP Newsletter, Number 16 December, 1968.
HSGP Newsletter, Number 17 April, 1969.
HSGP Newsletter, Number 18 January, 1970.
HSGP Newsletter, Number 19 September, 1970.
"Educational Games in HSGP Materials," *Newsletter Supplement*, May, 1968.
Mamie L. Anderzhon, "Geography Textbooks for Secondary Schools: An Annotated Bibliography," *Newsletter Supplement*, April, 1965.

OFFICIAL RELEASES

"A Joint Effort to Improve High School Geography," *Journal of Geography*, Vol. 60 (November, 1961), pp. 357-360.

"HSGP Newsletter" *Journal of Geography*, Vol. 61 (March, 1962), p. 132.
"HSGP Begins Experimental Year," *Journal of Geography*, Vol. 61 (November, 1962), pp. 367-369.

PAPERS

Advisory Paper for Teachers Associated with The High School Geography Project, Joint Committee on Education of The Association of American Geographers and The National Council for Geographic Education, August, 1962.
Response Paper: Suggestions from Teachers Associated with The High School Geography Project, Joint Committee on Education of The Association of American Geographers and The National Council for Geographic Education, August, 1963.
Advisory Paper: On The Nature of Geography and The Objectives of Geography Teaching, 1962—a partial reissue in 1965.
Means of Instruction: An Alphabetized Selection, from The Response Paper 1963, a partial reissue, 1965.
The High School Geography Project: Four Papers, 1969:
Nicholas Helburn and Gilbert F. White, "A Strategy for Change in Geography Education."
Donald J. Patton and Elizabeth Johnson, "Geography in An Urban Age: Nature, Content and Strategy."
Dana G. Kurfman and James Marran, "Evaluation and Reception by the Schools."
Robert Richburg and George Vuicich, "Educating Teachers in the Use of a New Geography."
Clyde F. Kohn, editor, *Selected Classroom Experiences: The High School Geography Project* (Normal, Illinois: National Council for Geographic Education, 1964).

REPORTS

Report to the Association of American Geographers' Council for the period to March 16, 1964.
Report to the Association of American Geographers' Council for the period to March 16, 1965.
Report to the Association of American Geographers' Council for the period July 1965 to July 1966.
Report to the Association of American Geographers' Council for the period July 1966 to March 1967.
Report to the Association of American Geographers' Council for the period March 1967 to July 1968.
Report to the Association of American Geographers' Council for the period August 1968 to July 1969.
Report to the Association of American Geographers' Council for the period August 1969 to September 1970.
Progress Report on the High School Geography Project to the Association of American Geographers' Council, January 1965.
Progress Report on the High School Geography Project to the Association of American Geographers' Council, March 1965.
Progress Report on the High School Geography Project to the Association of American Geographers' Council, April 1965.
Progress Report on the High School Geography Project to the Association of American Geographers' Council, October 1965.
Progress Report on the High School Geography Project to the Association of American Geographers' Council, November 1966.
Progress Report on the High School Geography Project to the Association of American Geographers' Council, May 1968.

MISCELLANEOUS

Arthur Getis, *A Description of a Teaching Unit in Urban Geography*, 1965.
Perspective for the Teacher, August 1, 1968.
Demonstration Kit, December 1967.
Teacher Education Kit: Using Simulation to Involve Students, 1970.
Teacher Education Kit: Using Media to Stimulate Inquiry, 1970.
Teacher Education Kit: Using Evaluation to Improve Instruction, 1970.
Sample Kit: HSGP Teacher Education Materials, 1970.
HSGP, Boulder, Colorado, brochure accompanying Demonstration Kit, 1967.
Script for the High School Geography Project's Presentations Kit, 1970.
Teaching Procedures for the New Social Studies, booklet enclosed with Teacher Education Sample Kits, 1970.
HSGP Brochure, 1969.

EVALUATION REPORTS

Informal School Trials

Japan Unit Evaluation Report, December, 1966.
Agriculture Unit Evaluation Report, April, 1967.
Habitat Unit Evaluation Report, May, 1967.

Formal Trials

The Growth of Cities Unit Evaluation Report, February, 1968.
The Geography of Culture Change Evaluation Report, April, 1968.

Agriculture Unit Evaluation Report, June, 1968.
Japan Unit Evaluation Report, June, 1968.
Geography of Cities Unit Evaluation Report, December, 1968.
Manufacturing and Agriculture Unit Evaluation Report, February, 1969.
Cultural Geography Unit Evaluation Report, March, 1969.

Evaluation Reports Produced by Educational Testing Service for High School Geography Project

Introductory Unit Educational Testing Service Evaluation Report, April, 1966.
Fresh Water Resources Unit Educational Testing Service Evaluation Report, May, 1966.
Inside the City Unit Educational Testing Service Evaluation Report, December, 1966.
Networks of Cities Unit Educational Testing Service Evaluation Report, January, 1967.
Manufacturing Unit Educational Testing Service Evaluation Report, February, 1967.
Political Processes Unit Educational Testing Service Evaluation Report, April, 1967.

HIGH SCHOOL GEOGRAPHY PROJECT TESTS

Urban Unit Test, Form NHS1, 1965.
Introduction to Geography Test, Form NHS2, 1965.
Introductory Unit Test, Form OHS, 1966.
Inside the City Unit Test, Form OHS, 1966.
Networks of Cities Unit Test, Form OHS2, 1966.
Manufacturing Unit Test, Form OHS2, 1966.
Japan Unit Test, Form OHSX8, 1966.
Agriculture Unit Test, Form PHS, 1967.
Political Processes Unit Test, Form PHS, 1967.
Habitat Unit Test, Form PHS, 1967.
Growth of Cities Unit Test, Fall 1967.
Geography of Culture Change, Fall 1967.
Form 1, Fall 1968.
Form 2, Fall 1968.
Form 3, Fall 1968.
Form 4, Fall 1968.

Appendix 4

Inventory of Materials for Geography in an Urban Age

UNIT 1, GEOGRAPHY OF CITIES

Teacher's Guide
Student Resources
Student Manual
Transparency Masters:

1 site diagram for 1800 (Activity 1)
1 site diagram for 1830 (Activity 1)
1 site diagram for 1860 (Activity 1)
1 site diagram for 1890 (Activity 1)
1 site diagram for 1910 (Activity 1)

1 "Rivers and Lakes of a Portion of the Interior of North America" (Activity 1)
1 "Population of Major Cities—1840" (Activity 1)
1 "Population of Major Cities—1890" (Activity 1)
1 "An Interpretation of Sectors" (Activity 3)
1 "Shopping Trips for Food, Kitchener, Ontario" (Activity 5)
1 "Predominantly Negro Areas" (Optional activity, "Migrants to the City")
1 "Low Income Areas" (Optional activity, "Migrants to the City")
1 "Chicago Police Districts" (Optional activity, "Migrants to the City")
1 "Chicago Health Districts" (Optional activity, "Migrants to the City")

Tablets:

16 sheets of Census Tract Data, New Orleans Standard Metropolitan Statistical Area, 1960 (Activity 2)
32 sheets of a Chicago Map, "Percentage of Housing Units Built 1950 or Later" (Activity 3)
32 sheets of a Chicago map, "Persons per Residential Acre" (Activity 5)

Maps:

1 USGS map, "New Orleans and Vicinity" (Activity 2)
15 topographic maps, "Spanish Fort Quadrangle" (Activity 2)
15 topographic maps, "New Orleans East Quadrangle" (Activity 2)

Miscellany:

15 sets of 7 stereograms (Activity 2)
15 stereoviewers (Activity 2)
15 sheets entitled "Topographic Map Symbols" (Activity 2)
15 pamphlets entitled "Topographic Maps" (Activities 2 & 4)
Portsville map package (Activity 4):
4 Plastic Modulex boards of Portsville. Each map board comes with:
1 land-use key card
3 trays of plastic building blocks, railroad strips, date cards and inventory sheets:
1850-1880 (Tray 1)
1880-1890 (Tray 2)
1890-1900 (Tray 3)
1 light green perforated plastic sheet
1 dark green perforated plastic sheet
1 plastic fork for attaching the perforated sheets to the overlay

1 teacher's inventory and direction sheet
1 envelope entitled "Selected Statistical Data for Chicago" (Optional activity, "Migrants to the City") containing the following tables:
"Educational Attainment in Chicago by Health District, 1963"
"Homicides in Chicago by Police District, 1966"
"Robberies in Chicago by Police District, 1966"
"Tuberculosis Rate in Chicago by Health District, 1962"
"Infant Mortality Rate in Chicago by Health District, 1962"
"Birth Rate in Chicago by Health District, 1963"

UNIT 2, MANUFACTURING AND AGRICULTURE

Teacher's Guide
Student Resources
Student Manual
Transparency:

1 world transparency base with 6 color overlays and 1 black overlay: "Rice," "Wheat," "Corn," "Cattle," "Hogs," "Cotton," and "Population" (Activity 6)

Transparency Master:

1 "Alternative Metfab Sites in The U.S.S.R." (Optional activity, "Metfab in the U.S.S.R.")

Miscellany:

2 records containing 4 interviews (Activity 7):
Interviews with Mr. Reppert and Mr. Sorenson
Interviews with Costa Rican and Polish farmers
"The Game of Farming" (Activity 8)
1 index card box:
First Entry: 1880-1882:
15 role cards
16 outcome cards for 1880
16 outcome cards for 1881
16 outcome cards for 1882
Second Entry: 1919-1921
16 outcome cards for 1919
16 outcome cards for 1920
16 outcome cards for 1921
Third Entry: 1933-1935
16 outcome cards for 1933
18 wipeout cards
16 outcome cards for 1934
16 outcome cards for 1935
1 large envelope:
3 activity sheet tablets (1880-1882, 1919-1921, 1933-1935)
2 base maps labeled "1880" and "1921"
20 sheets of gummed colored paper

UNIT 3, CULTURAL GEOGRAPHY

Teacher's Guide
Student Resources
Student Manual
Transparency Masters:

1 "Northeastern Expansion of Islam" (Activity 3)
1 "Northwestern Expansion of Islam" (Activity 3)
1 "Eastern Expansion of Islam" (Activity 3)
1 "Western Expansion of Islam" (Activity 3)
1 "Southeastern Canada" (Activity 4)
1 "White and Black Squares Separated" (Activity 4)
1 "Black and White Squares Mixed" (Activity 4)
1 "Population Diagrams" (Optional activity, "Games Illustrating the Spread of Ideas")
1 "Blockade-Pass Route" (Optional activity, "Games Illustrating the Spread of Ideas")

Filmstrips:

Frames 1-16 (Activity 1)
1. Milking parlor
2. Herd of Herefords
3. Herd of Holsteins
4. "The Wagon Train," a painting
5. Cattle pulling seeder in Canada
6. Pack animals in Nigeria
7. Bullfight in Spain
8. Carts loaded with manure
9. Water wheel in Egypt
10. Collecting blood from cattle
11. Cattle pulling load of fish nets
12. Cattle on a downtown street
13. Cow decorated for a festival
14. Fields in Canary Islands
15. Large equipment on United States rice fields
16. Rodeo

The frames numbered 1, 13, 14, and 16, are copyrighted by the National Geographic Society.

Frames 51-65 (Activity 5):
Traditional-style buildings and downtown sections of modern cities:
51. Bangkok, Thailand
52. Bruges, Belgium
53. Toledo, Spain
54. Korbo, Chad
55. York, England
56. Sanā, Yemen
57. St. Louis, United States
58. Kano, Nigeria
59. Yakutsk, U.S.S.R.
60. Tokyo, Japan
61. São Paulo, Brazil
62. Ulan Bator, Mongolia
63. Boston, United States
64. Kinshasa, The Congo
65. Suburb of London, England

Frames 51, 52, 55, 56, 59, 61, 62, and 65 in the filmstrip are copyrighted by the National Geographic Society.

Tablet:
"Quiz on How Sports Spread" (Activity 2)

UNIT 4, POLITICAL GEOGRAPHY

Teacher's Guide
Student Resources
Student Manual
Transparency:

1 "Millersburg" transparency base with 4 overlays (Activity 3)

Transparency Masters:
2 "Scoring Budget Decisions" (Activity 1)
1 "Election Returns" (Activity 1)
1 "State of Columbia, Registered Voters, 1960" (Activity 2)
1 "Registered Voter Surplus" (Activity 2)
1 "Millersburg" (Activity 3)
1 "First Tier Authorities of London Before 1963" (Activity 4)
1 "Second Tier Authorities of London Before 1963" (Activity 4)
1 "Metropolitan Police District" (Activity 4)
1 "London Postal District" (Activity 4)
1 "Metropolitan Water Board Area" (Activity 4)
1 "Area Administered by the Port of London Authority" (Activity 4)
1 "Area Administered by the London Transport Executive" (Activity 4)
1 "Greater London Council Area and the 32 Boroughs" (Activity 4)
1 "London Local Government Structure" (Activity 4)

Miscellany:
1 tablet with 40 role profiles (Activity 1)
1 tablet with 30 role profiles (Activity 5)
1 set of 28 sheets of suggestions for students (Activity 5):
1 sheet "Suggestions for the Political Moderator"
4 sheets "Suggestions for Members of the Canadian Negotiating Team"
4 sheets "Suggestions for Members of the United States Negotiating Team"
4 sheets "Suggestions for Members of the International Joint Commission"
3 sheets "Suggestions for Members of the Arbitration Commission"
12 sheets "Suggestions for Private Canadian and United States Citizens, Including Residents of Point Roberts"
30 copies of each of 5 issues of *The Pointer* (Activity 5)
The Pointer—First Day
The Pointer—Second Day
The Pointer—Third Day
The Pointer—Fourth Day
The Pointer—Fifth Day

UNIT 5, HABITAT AND RESOURCES

Teacher's Guide
Student Resources
Student Manual
Transparency Masters:

1 "Average Colby Water Balance" (Activity 6)
1 "Colby Water Balance in 1934" (Activity 6)
1 "Washington, D.C., Water Balance" (Activity 6)
1 "Run-Off Data for the Potomac River at Point of Rocks, Md." (Activity 6)

Record:
1 12-inch record:
Side 1—"Radio News Broadcast" (Activity 4)
"Radio Commentary" (Activity 4)
Side 2—"Interview with an International Waste Management Expert (Activity 7)

Miscellany:

15 copies of an outline map, "Location of Places and Areas Shown in Photographs" (Activity 1)
15 copies of an aerial photograph showing part of the Watchung Mountain Area, 1956 (Activity 3)
15 copies of an aerial photograph showing part of the Watchung Mountain Area, 1963 (Activity 3)
15 copies of a 6-color topographic map showing part of the Watchung Mountain Area (Activity 3)
3 sets of student readings (Activity 7):
Solid Waste Management—readings 1-12
Liquid Waste Management—readings 13-23
Air-Borne Waste Management—readings 24-34
8 copies each of 8 different data sheets on the Lower Nile and Salton Sea areas (Activity 2):
"Relief"
"Population Distribution"
"Climate"
"Income"
"World Location"
"Irrigation"
"Crops"
"Water Resources"
27 role profiles (Activity 4):
Martin Andrews—Mining Warden
John Stanfield—President, Rutile Mineral Company
Henry Pearson—Operations Engineer, Rutile Mineral Company
Salvatore Cicconi—Miner
Jim Fisher—District Inspector of Mines
Gregory Hamilton—Deputy Minister of Mines, New South Wales
Anthony Jaremolek—Australian Citizen
Kelly Termaine—Member, National Trust of Australia
Marie Tasenko—Secretary, Iluka Rain Forest Protection Committee
Sandy Loam—Officer, Soil Conservation Service
Kensington Galsworth — Chairman, Royal Australian Ornithological Union
Reginald Watson-Jones—Member of Parliament
Robert Dunn—President, Iluka-Yamba Chamber of Commerce
Beverley Beavercrown—Editor, *Sydney Morning Herald*
Graham Brown—Australian Citizen
Celeste Grantham—Senior Lecturer, Botany Department, University of New England, Armidale
Marty Johnson—President, Sydney Hotel and Restaurant Association
Grover Winslow—Executive Vice-President, Qantas Airlines
Julie Winter—Australian Citizen
Toni Sailor—Brisbane Real Estate Agent
Mary Jane Wynne—Director of Public Relations, Surfboard Limited
John Harold—Juror
Samuel Stein—Juror
Rose Marie Padrona—Juror
William Breakers—Juror
Walter Novak—Juror
Jason Gardner—Juror

UNIT 6, JAPAN

Teacher's Guide
Student Resources
Filmstrip:

A Comparison: Japan and North America (Activity 1)
Frames 1-12
1. Buddhist Temple, Japan
2. Rice Field, Kochi Prefecture, Japan
3. Aerial view, farming area and market town, British Columbia
4. Central Hokkaido agricultural area
5. Agricultural area, Montana
6. Imperial Palace Plaza, downtown Tokyo
7. Freeway in Tokyo
8. Steel Mill, Kawasaki, Japan
9. Sumo wrestling tournament, Japan
10. Japanese street scene at Christmas time
11. Downtown Tokyo at night
12. Japan—traditional and modern

Transparency Masters:

1 "Life Expectancy at Birth" (Activity 3)
1 "Amount Spent Per Person" (Activity 3)
1 "Living Expenditures in City Households" (Activity 3)
1 "Living Expenditures in Selected Countries" (Activity 3)
1 "Housing Conditions in Selected Countries" (Activity 3)
1 "Subscribers to National Television" (Activity 3)
1 "Literacy Rates in Selected Countries" (Activity 3)

Appendix 5

Overview Charts for Units of Geography in an Urban Age

Overview of Teaching Times, Objectives, and Strategies for Unit 1, Geography of Cities

Integral Activities	Time in 50 min. class periods	Media and Procedures	Major Ideas and Skills	Possible Home Assignments	Related Optional Activities
1 City Location and Growth	3	Students select settlement sites using hypothetical diagrams. They then prepare diagrams for a current subdivision site as well as for one in the future. Next they use drainage maps of the American Midwest and predict where settlements might develop. Predictions are checked with reality.	Site features and locational factors influence city growth. Locational advantages or disadvantages are relative to the times and do change. Skills in making and justifying decisions.	Preparation of site diagrams Readings: "Present-Day Site Selection" "Frontier Lawyer"	A Tale of Three Cities Bruges
2 New Orleans	4	Students use aerial photographs and topographic maps to learn about the parts that comprise the city and the interrelationships of the parts. They then study three residential neighborhoods and try to account for observed differences.	Urban analysis Skills in interpreting aerial photographs and maps. Skills in hypothesizing about relationships between urban features and social and economic characteristics of the population.	Reading: "Topographic Maps" Using census data to try to locate two residential areas on a map.	Time-Distance
3 City Shape and Structure	4	Students discuss 4 diagrams that indicate directions in which cities might grow. They predict three distributions within the city of Chicago based on a theory of city growth and then check their predictions against actual distributions. A second theory is suggested and students look for evidence in maps. Then they try to combine the two theories.	Skills in working with abstractions (theories). Skills in looking at a whole city to identify relationships not apparent otherwise. Skills in using the scientific method (prediction and verification).	Readings: "Understanding the City" "Age Distribution in Chicago" "A Different Theory"	Migrants to the City Megalopolis

Integral Activities	Time in 50 min. class periods	Media and Procedures	Major Ideas and Skills	Possible Home Assignments	Related Optional Activities
4 Portsville	8 to 10	Information about the founding and the growth of an American city is presented in a four-part narrative with photographs. Students use the information and their general knowledge to construct a map model of the city at three time periods. There is an optional part that identifies the real city and brings students up to date about the city's progress.	Urban synthesis Skills in working in a group to make logical decisions about how a city may have been organized at given time periods under given conditions.	Reading: Any of the sections of the narrative about Portsville.	Time-Distance Megalopolis Local Community Study
5 Sizes and Spacing of Cities	4 to 5	Students prepare consumer travel maps showing their own shopping behavior. Basic ideas about trade areas are discussed. The class looks at implications of consumer behavior on towns and cities and then divides into groups for independent work. Groups rotate through three exercises that deal with how an urban network reflects cultural habits, changes through time, and the effects of a large metropolis. There is a general debriefing session.	An urban network is dynamic. Relationships exist between the sizes of cities and their numbers and spacing. The concept of trade area is useful in understanding a network of cities.	Student interviews of schoolmates about shopping habits is optional.	Local Shopping Survey.
6 Cities with Special Functions	1	Students list special functions of some cities, then match photographs of cities with functions. They discuss how special functions cause irregularities in the spacing of cities.	Special functions are often due to local advantages.	Matching exercise	Megalopolis

Overview of Teaching Times, Objectives, and Strategies for Unit 2, Manufacturing and Agriculture

Integral Activities	Time in 50-Min. Class Periods	Media and Procedures	Major Ideas or Skills	Possible Home Assignments	Related Optional Readings or Activities
1 Geographic Patterns of Manufacturing	1	Students associate maps of distributions of various kinds of manufacturing with descriptions of factors that influence the location of these types of industry.	The location of some types of manufacturing is most influenced by a need to be near raw materials while other types of manufacturing locate near markets or labor or transportation.	Reading: "Colonial Life"	
2 The Importance of Manufacturing	2 to 3	Students read about and discuss the influence of manufacturing on their daily lives and then study the place of a local factory in the economy of their community.	Manufacturing plays a large role in determining the level and way of living in the United States.	The optional readings.	Readings: "A Pair of Shoes" "A Loaf of Bread" "The Carpet Capital" "The Complexity of Manufacturing"
3 Location of the Metfab Company	5 to 6	Students examine data on raw materials, labor, potential markets, and shipping costs and attempt to determine an optimum location for a hypothetical metal equipment manufacturing plant.	Least cost and maximum profit considerations strongly influence manufacturing location decisions.		Locating Metfab in the USSR
4 Graphic Examples of Industrial Location	2	Students read about and graphically illustrate the relative importance of the factors which influence the location of various types of manufacturing in the United States.	Factors influencing location have different degrees of importance in various types of industry.	Student reading. Also preparation of the diagrams.	Two Case Studies
5 Hunger	2 to 3	Students read about and discuss mass hunger and its attendant problems, especially in underdeveloped parts of the world.	Achieving an adequate food supply for all people calls for complex changes in man's use of farm land and in his attitudes.	Reading: "Hunger."	Reading: Last two sections of "Hunger"
6 The Agricultural Realm	3 to 4	Students study distribution of various farm commodities and discuss the influences that created the patterns.	Physical, cultural and economic factors influence the way land is used in agricultural areas.	Research assignment. "Some Characteristics of Agriculture"	

Integral Activities	Time in 50-Min. Class Periods	Media and Procedures	Major Ideas or Skills	Possible Home Assignments	Related Optional Readings or Activities
7 Interviews with Farmers	5 to 7	Students read scripts or listen to recorded interviews with farmers in various parts of the world and discuss the factors which have influenced their decisions about what to raise.	Physical conditions, cultural preference and availability of land, labor, and capital are among the factors that influence a farmer's decisions about what he will raise and how he will raise it.	Reading of the interviews with Mr. Sorenson and with Mr. Yomura.	
8 The Game of Farming	4½ to 6	Students simulate farmers in western Kansas in order to learn the hazards of an occupation that is dependent on biological processes.	A farmer, in dealing with a biological process, faces economic hazards that a manufacturer does not.	Instructions for the game and newsreel readings.	The newspaper reprints
9 Enough Food for the World?	1 to 2	Students read about and reassess the problem of hunger in the world today.	Willingness to accept ideas, education in farm techniques, and capital are essential to a solution of the hunger problem.	Reading: "Enough Food for the World?"	Reading: "New Land for Farming?"

Overview of Teaching Times, Objectives, and Strategies for Unit 3, Cultural Geography

Integral Activities	Time in 50 min. class periods	Media and Procedures	Major Ideas and Skills	Possible Home Assignments	Related Optional Activities or Readings
1 Different Ideas About Cattle	3	Students view slides of different uses of cattle around the world and discuss these uses in the context of the total cultures involved.	Customs that seem strange to Americans make sense when one understands their function in the total culture of a people.	Readings: "What's a Cow to the Nuer?" "Bullfight" "Cattle in India"	
2 A Lesson from Sports	2 to 3	Students examine and discuss the origin and diffusion of sports.	As an idea spreads through time and space its content often changes.	Readings: "Football" "Basketball" Library research Write essay	Games Illustrating the Spread of Ideas. Readings: "Origins of the Olympic Games" "Home Away from Home" "Letters from the Padres" "Corn and Custom" "The Long Road" "The Muslim Town"
3 Expansion of Islam	5 to 7	Through readings, discussion, and mapwork students follow and account for the spread of Islam.	Many factors jointly influence the diffusion of a culture and the consequent change of landscape.	Any sections of the narrative	
4 Canada: A Regional Question	3 to 4	Students read about and discuss two adjacent cultures in Southeastern Canada, then try to draw a boundary between the two cultures.	Common traits in a cultural heritage can be used to distinguish culture regions.	Reading: "Canada: A regional Question"	
5 Culture Change: A Trend Toward Uniformity	2 to 3	Students view slides of several American and foreign cities. They discuss and account for the similarities and differences they see.	Ideas are being exchanged among the various areas of the world at an accelerating rate, resulting in a certain cultural uniformity.	Readings: "The Traditional Chinese City" "The Muslim Town"	

Overview of Teaching Times, Objectives, and Strategies for Unit 4, Political Geography

Activities	Time in 50 min. class periods	Media and Procedures	Major Ideas and Skills	Possible Home Assignments
1 **Section**	**5 to 8**	Section is an activity in which students role-play state representatives, members of an executive committee, and citizens of a hypothetical state to make decisions about how to allocate the state's budget. Once the budget is set, it is evaluated in terms of how each section of the state fared. Citizens vote on the effectiveness of their representative, and representatives vote on the effectiveness of the Executive Committee.	Skills in making and justifying decisions Skills in the art of compromise Awareness of some of the problems that society and government face Awareness of some of the geographic implications of legislative decisions	Reading: "Midland Gazette" Preparing the budget proposals to present to the legislature Writing letters to the editor
2 **One Man, One Vote**	**3 to 4**	Students work with hypothetical voter data for the imaginary state of Columbia. They try to solve a problem of malapportionment by drawing new voting districts. The districts are reappraised with new information, party affiliation of registered voters. Students learn about gerrymandering.	Inequalities of representation occur through voting districts. Voting districts tend to remain fixed while population numbers change. The arrangement of voting districts, hence representation, influences legislation. Skills in making and justifying decisions	Readings in **Student Resources** Tables and questions in **Student Manual** Drawing district boundaries Redistricting so as to gerrymander
3 **School Districts for Millersburg**	**2**	Students read about a hypothetical city and work with a set of maps showing industrial and business areas, elementary schools, family income, minority groups, and population density. They district the city for high schools. The class discusses the implications of selected maps.	Political and social implications of district boundaries Skills in making and justifying decisions	Reading: "The City of Millersburg" Drawing district boundaries

Activities	Time in 50 min. class periods	Media and Procedures	Major Ideas and Skills	Possible Home Assignments
4 **London**	4	The London activity involves 3 student readings and teacher-led discussion. The general problem of metropolitan government is investigated and London is a case study. The territorial organization of London's government is looked at before and after reorganization. Transparencies are provided to aid discussion of special-function districts as well as governmental organization.	Governmental functions are divided among political territories of different rank and size. There are advantages and disadvantages to both large and small administrative units.	Readings: "Governing a City" "The Many Worlds of London" "London Government before 1963"
5 **Point Roberts**	6	Students role-play members of the International Joint Commission, United States and Canadian negotiating teams, the Arbitration Commission, and private citizens in an international boundary dispute. The place is real, Point Roberts, Washington, the facts are real, but the situation has never reached the crisis stage portrayed in this activity.	Boundaries interrupt the flow of people, commodities, and services. Boundary disputes arise out of historical events and accidents. Several solutions with varying degrees of acceptability are possible. Skills in negotiation and compromise	Reading: "News Broadcast" "Role Profile" "Instructions to Students" Issues of "The Pointer" Writing articles for "The Pointer"

Overview of Teaching Times, Objectives, and Strategies for Unit 5, Habitat and Resources

Activities	Time in 50-Min. class periods	Media and Procedures	Major Ideas or Skills	Possible Home Assignments
1 Habitat and Man	3	Students examine thirteen color photographs showing a variety of ways in which man has changed his habitat. Classification of habitats is a discussion topic. Students read about habitat unity.	Habitats may be classified according to the degree of change imposed by man. Every habitat consists of a large number of interdependent elements.	Reading: "Habitat Unity"
2 Two Rivers	2	Students, in small groups, identify the similar characteristics of two habitats, then predict the kinds of human activities that would be anticipated in the two habitats.	Cultural traditions, technology and population affect the ways in which man uses similar habitats.	Readings: "The Nile Habitat" "Salton Sea Area"
3 Watchung	2	Students, in small groups, predict the probable locations of agricultural and industrial settlements in a mountainous area. They check their predictions using a USGS quadrangle sheet and matching aerial photographs.	Terrain conditions relate to patterns of settlement in different ways depending on the technology of the settlers and the population pressure on the area. Skills in using maps and aerial photos for data extraction.	Readings: parts of **Topographic Maps** booklet "Watchung"
4 Rutile and the Beach	5 to 6	Students role-play representatives of Australian mining, conservation and recreation groups who are in competition for land use. Groups attempt to convince jury of their case, using a technical report on rutile as source material. Simulated radio news commentary gives American perspective on determining benefits, costs and risks of resource use.	Because resources are defined in terms of needs and technology, conflicts arise over resource use. Skills in evaluating and using data. Skills in the art of compromise. Skills in public speaking.	Study of roles Reading: "Rutile: Nature and Uses, Mining Practice and Impact on the Environment"

Activities	Time in 50-Min. class periods	Media and Procedures	Major Ideas or Skills	Possible Home Assignments
5 Flood Hazards	**3 to 4**	Students, working in small groups, analyze a firm's flood problem to determine which adjustment or combination of adjustments should be made. Students work with benefit-cost ratios.	Many adjustments to floods are possible. Each alternative or combination has benefits and costs which must be evaluated. Skills in making and justifying decisions. Skills in the art of compromise.	Readings in **Student Resources**
6 Water Balance	**5 to 6**	Students read about the importance of water and the water cycle. Then they are introduced to water balance graphs and, finally, construct their own graph. Implications of water balance and seasonal variations are considered.	The water balance affects many different kinds of human activity of an area. Skills in using data on graphs. Familiarity with a water balance graph.	Reading in **Student Resources,** "The Water Balance" "The Water Balance Program," "Review Puzzle" & graph & questions in **Student Manual**
7 Waste Management	**6 to 12**	Students work in groups and make recommendations on problems of solid, liquid and airborne waste disposal problems for New York City area. Recording of a simulated interview with international waste management expert gives world-wide examples for discussion and provides basis for written work. Study of a local waste disposal situation emphasizes immediacy of the problem.	The volume and character of wastes is affecting the quality of the environment. A relationship exists between economic consumption and waste production. Waste disposal decisions can affect ecological systems to cause imbalances.	Reading selections from: "Solid Waste Management" "Liquid Waste Management" "Airborne Waste Management" Essay on a topic relating to the quality of the world environment

Overview of Teaching Times, Objectives, and Strategies for Unit 6, Japan

Activities	Time in 50-Min. class periods	Media and Procedures	Major Ideas or Skills	Possible Home Assignments
1 Introduction to Japan	1	Students view and discuss a filmstrip of scenes of Japan and North America. They note the economic and cultural similarities and differences.	Awareness that Japan is a modern, industrial nation. Awareness of Japan's location in the world.	
2 Traditional Japan	2 to 3	Students use a reading, describing life in mid-nineteenth century Japan, to help them determine the origins of a group of Japanese and Western proverbs. Class and group discussions of characteristics of traditional Japan also focus on indicators of cultural change.	Ability to identify some traditional aspects of Japanese culture. Skills in making and justifying decisions.	Reading: "Yokichi, A Young Warrior"
3 Japan Today	2 to 4	A reading about modern Japan is used as a basis for comparisons with traditional Japan. In class discussion students consider the meaning of a "developed" country. Students are introduced to using data presented in various forms.	Familiarity with various indicators of standard of living. Familiarity with extracting data presented in charts and graphs.	Reading: "Life of a Japanese Family Man"
4 The Modernization of Japan	6 to 7	Working in small groups, students draw up recommendations for economic development using data presented in various forms.	Modernization is a complicated process involving many aspects of a country's life. Each country's pattern of modernization is unique. Skills in working with raw data. Ability to develop and defend hypotheses.	Reading: "General Instructions for Committees of Specialists" Researching and writing reports of recommendations for developing countries

Appendix 6

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Appendix 7

Summary of Financial Support and Expenditures

Sources of Income:

A. Fund for the Advancement of Education:		
April, 1961	$ 55,000	
April, 1962	116,000	
November, 1963	7,000	
		178,000
B. National Science Foundation Grant #5248:		
April, 1964	160,140	
September, 1965	562,117	
October, 1966	400,000	
June, 1967	58,000	
October, 1967	480,661	
February, 1968	46,143	
May, 1968	16,056	
October, 1968	459,000	
April, 1969	10,346	
October, 1969	117,000	
		2,309,463

Disbursement of Total Funds Received from the National Science Foundation:*

Salaries, Wages, Consultant Fees	57%
Travel	9%
Printing & Publication	10%
Postage & Telephone	4%
Expendable Supplies & Services	2%
Use of Facilities & Equipment	7%
Legal Services	1%
Indirect Costs	10%
	100%

*The percentages are approximate for the entire period. They are not indicative of actual expenditures in any one year. Several of the grants were not fully expended in the specified period and involved carry-over for subsequent expenditure.

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